

ENGINEERING PRACTICES STUDY

TITLE: SURVEY TO STANDARDIZE RETENTION DATA REQUIREMENTS FOR
MULTIPLE COMMODITIES.

Project number: 5961-2018-029

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STUDY PROJECT (SEE ATTACHMENT 1)

FINAL REPORT

Study Conducted by DLA LAND AND MARITIME

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I. **OBJECTIVES:** DLA Land and Maritime-VAC has conducted a survey on the data retention requirements for general specifications, including MIL-PRF-19500 and other general specifications for related electronic devices. The purpose of the survey (in **Attachment 1**), was to obtain input from the manufacturers, military services, and user communities on the preferred length of time and type of records to maintain, and to align the requirements across DLA general specifications.

II. **BACKGROUND:** The general specifications data retention requirements are not the same for all electronic commodities. One example of an inconvenience that this poses is that when evaluating devices on an electronic system the availability of data is different depending on the type of electronic device even though they are all on the same circuit card assembly or system. The general specifications for electronic devices currently specify different data retention times, and types of data required, to be maintained. The general specifications either specify their own individual requirements or use the requirements from MIL-STD-790. An example of some of the general specification data retention requirements are listed below.

Current retention times:

MIL-PRF-38534:	3 years all Classes except Class K; Class K: 7 years
MIL-PRF-38535:	5 years (records pertaining to screening and quality conformance)
MIL-PRF-19500:	10 years
MIL-STD-790:	5.2.18.1 <u>Records to be maintained.</u> Records shall be legible and maintained which will adequately describe the processes, materials, inspections, and tests which affect the quality of the device for appropriate amounts of time such that quality concerns and customers are properly supported (e.g. conformance testing records). The records pertaining to production processes, incoming, and in-process inspections should be retained for a minimum of 3 years (7 years for space level) and those pertaining to performance verification retained for a minimum of 5 years (7 years for space level) after performance of the inspections. Records pertaining to alternate methods (with qualifying activity approval), conformance testing shall be retained for 5 years (7 years for space level) after the process or materials affected have been removed from the qualified flow.

Proposal. DLA Land and Maritime received a proposal to align the data retention requirements in DLA general specifications for electronic devices. The proposal baseline for data to be retained includes all design, manufacturing, testing, and quality records for each lot, for 15 years after delivery of the product. The proposal is included in **Attachment 1**.

III. **RESULTS:** Comments were received regarding the proposed 15 year data retention period proposal. Half of the comments approved, and the other half disapproved of the increase and standardization.

IV. **CONCLUSIONS:** Based on the comments received, there will be no immediate proposals to increase the data retention time. In addition, a second study is being sent to the users of MIL-STD-790 to gather additional feedback that will be able to be used for this continuing effort.

Future efforts will also propose changing the format verbiage from "The records shall be retained in the form in which they were originally defined..." to "The records may be retained in the form in which they were originally defined..." this change would allow the format of the data to be transferred to a format that is most applicable for long term storage.

V. **RECOMMENDATIONS:** DLA Land and Maritime recommends that the applicable federal stock classes continue to work with their users and manufacturers to maximize the amount of time for data retention to meet the customer's needs.

Attachment 1

Proposed requirement verbiage to be added to DLA Land and Maritime general specifications record retention section:

Record retention. The manufacturer of QML devices (all class levels) shall retain all design, manufacturing, testing and quality records for each lot for a period of 15 years after delivery of product. The records shall include as a minimum:

- a. Design
- b. Manufacturing
- c. Travelers
- d. Inspection
- e. Test results
- f. Screening results
- g. Qualification plans and results
- h. Quality conformance test results
- i. Rework
- j. Failure analysis and corrective actions
- k. TRB decisions
- l. Training
- m. Customer returns

The records shall be retained in the form in which they were originally defined but electronic media is preferred and a copy shall be provided to the qualifying and/or procuring activity as requested.

Survey Questions:

1. What is the standard amount of time manufacturers retain data for military products? For commercial products?
2. Is a proposed 15 year retention time acceptable?
3. What concerns do manufacturers have with retaining records electronically?
4. Can all lot data be retained, including travelers, incoming inspection, R&R, screening, QCI, etc. If the answer is no, what data can be retained?
5. What financial hardship, if any, would this endeavor impose?
6. For users of military devices, are there any additional types of data that you would like to see retained?

Attachment 2: Survey Responses

1. What is the standard amount of time manufacturers retain data for military products? For commercial products?

Commenter	Years data retained		
	Mil	Commercial	
1	7	7	
2	J, JTX/JTXV 5, 7, or 10 JANS 20/25	5, 7, or 10	Depending on the OEM requirements passed down to the manufacturer
3	5	5	However, in reality we maintain records for much longer
4	20	20	Design, qualification plans/results, QCI test results, FA all maintained indefinitely. Corrective action and training maintained 7 yrs.
5	Indefinitely	Indefinitely	*Electronic ver. Space level also has hard copies retained for 10 yrs.
6	5	5	
7	Permanently	Permanently	
8	(QML Q) >5 (QML V) >10	>3	The proposal is to keep all data "for 15 years after delivery of the product" -> this is not compatible for "design topics" with (our) core business "long term storage". Today we still offer devices designed in the last century ! Preferred -> 15 years after lot assembly (sealing date code)
9	10	10	
10	5	5	(Our companies) data retention periods vary depending upon the data type. Some data types have retention periods of up to 5-years, such as program data and data related to test results, can have data retention periods extending to as much as 15 years.
11	10	10	The standard amount of time data is retained varies depending on the type of data. For (Our company), an acceptable standard for record retention time is 10 years.
12	5	2	
13		-	We retain manufacturing/testing data for all military for more than 10 years

2. Is a proposed 15 year retention time acceptable?

Commenter		
1	Yes	
2	No	(Our company) believes that 15 years is excessive, the 10 year period is good. The proposal also changes the definition (ref paragraph D.3.16) from "based on lot date code" to "after delivery of product". Thus a manufacture who uses distribution will be able to effect a very similar time line. Because they ship to their distributors. Whereas a company like SSDI who attempts to support DMS product would be required to keep records "on infinitum"
3	Yes ?	We would be able to comply.
4	Yes	Yes with the exception of training records. We exceed 15 years for the majority of records we maintain currently.
5	Yes	
6	No	I do not believe that a 3X increase in retention is acceptable or even needed by our customers.
7	Yes	
8		Storage duration is only a parameter to set up, consequence will be the "cost"
9	No	No.(Our companies) position is to maintain all related testing and quality documents for a period of 10 years
10		As a commercial semiconductor supplier, (Our company) is not a manufacturer in the context of DLA's definition. Rather, (Our companies) customers include manufacturers of products that may be subject to the proposed retention time. Those manufacturers would be responsible for retrieving any data provided by (Our company), within availability timelines defined by (Our company), and required to retain the data necessary to satisfy DLA requirements.
11	No	For (Our company), an acceptable standard for record retention time is 10 years.
12	No	No, the 15 year retention time is for lot specific information as well as general information, with both being based on "after delivery of the product". Tying general information to specific lots is not reasonable. Generic information (affecting many lots and/or products) like TRB, IQC results, qualification plan and results, training etc... should have a fixed retention time based on creation date. Lot specific information that is retained for shipment is relatively easy to identify and retain based on delivery of product (see red text above). Note: effective date would need to take into consideration that records may have been purged already.
13		

3. What concerns do manufacturers have with retaining records electronically?

Commenter	
1	Storage, backup storage, data corruption
2	•Electronic data storage is relatively inexpensive, but it is not free. •We believe that delivering the Lot Data on disk, allows the end user to keep the data as short or as long a period of time that they desire, without applying excessive "one size fits all" mentality to the supplier.
3	Lost repositories and back-ups. Software obsolescence.
4	We currently scan documents now so do not see any issues other than we may need a full time employee to scan documents and verifying the quality of the scans.
5	None at this time. The potential is there for electronic storage to become an issue for companies with larger portfolios but I cannot comment on the specific concerns.
6	(Our company) does not store records electronically, we store all quality records in hard copy medium because it is people readable and is not effected by changes in equipment. How much data do you have on 5" floppy disks? Where could you get it read?
7	IT group maintains the servers and software used. Concerns with possible lost data and software version updates that may render electronic data unreadable or missing. Also, volume of data needs to be managed so it can be retrievable.
8	The major difficulty for a retention of electronic data does not reside in the storage duration or capacity itself but in the saving of hardware and software to be able to read those data 15 years later.
9	Storage space and cost for paper and electronic records
10	(Our company) is not a manufacturer of products subject to the proposed DLA retention period. However, as a supplier to customers that are, (Our company) would not find it reasonable for customers to require GLOBALFOUNDRIES to retain data for 15 years. Rather, (Our companies) customers would need to retain data while it is available from GLOBALFOUNDRIES, to comply with any retention period from DLA.
11	(Our company) routinely retains records electronically and has no concerns with that practice.
12	It would be time and cost prohibitive to store records (ie. travelers) in an electronic format where they are currently in paper form. We would need to resource for scanning or create a project to convert 100% electronic. A – M the only issue are the travelers, all other information is in electronic format.

4. Can all lot data be retained, including travelers, incoming inspection, R&R, screening, QCI, etc. If the answer is no, what data can be retained?

Commenter	
1	Yes
2	•The only data that should be considered for any extended retention is “deliverable data”, thus S level parts will have more data than other levels. •There are items that just cannot and should not be tied to delivery of the end item, such as training, calibration, receiving inspection, environmental controls, and process control records. These are related to a manufacturing event not related at all to product delivery.
3	Yes.
4	Yes
5	Yes
6	Of course, all data can be retained. The question is why? Perhaps all QML vendors should send hard copy of our data to DLA for retention after a 3 yr. period. This would relieve us of maintaining unnecessary documentation, and allow DLA access to the records on an as required basis.
7	Most lot data is retained including items mentioned. Some lower level detail [engineering logs, facility data] may only be retained for a shorter time.
8	It is already the case today for the majority of those topics (rather in “paper format”) Storage in electronic format is easier but the difficulty is to scan all the documents ! The good question is: In reality what document did we need to unarchive since 15 years -> answer = none!
9	Yes
10	(Our company) is not a manufacturer of products subject to the proposed DLA retention period. (Our company) does not store all lot data for 15 years; it does, however, provide industry standard data, including each customer's order, such as part numbers, lot numbers, wafer identification numbers, final quality inspection results. Customers that require data retention may create their own data base(s) for retention purposes.
11	Yes, all lot data listed can be retained.
12	Yes all the lot data can be retained

5. What financial hardship, if any, would this endeavor impose?

Commenter	
1	Labor cost to scan, organize, and store all data. Server/hard drive cost. Backup cost.
2	•This would be huge, currently we file every type of record by year. So assume the 10 year retention applies, thus we look at the year the record was created, and if it older than 10 years we are able to discard. The proposed change would add an analysis to determine if I delivered anything more recent and then keep the record, thus I would no longer be able to use the record creation date. •If the extended data retention were limited to deliverable data the cost impact would be less severe
3	None
4	None as we are currently close to meeting the proposed requirement
5	None at this time
6	(Our company) spends approx. 10 man weeks/yr (400 hours) maintaining our data retention files. We believe that by tripling the required retention time this will increase the man hours required to maintain the data by 2X or 800 hours/yr. It will also require investment in additional cabinets, and storage space.
7	Cost to maintain servers, run back-ups/disaster recovery processing.
8	It seems that storage in electronic format is less and less expensive.
9	Smaller companies will have difficulty managing a 50% increase in document control and physical paper volume. Storage space will likely be a limiting issue and would require the additional cost of off-site storage.
10	(Our company) has not sized, nor has it plans to size, the effort required with such 15-year retention as it is not a manufacturer as defined by DLA. However, if one was to size such an effort, the type and scope of data to be retained would be a significant primary variable that would modulate cost, and would need to be specified.
11	Providing resources (facilities and labor) to store and manage data in hard copy form as well as electronic form would be a financial hardship. AVX recommends that shall be changed to may in the record form statement below the record retention list in Attachment 1.
12	Financial hardship would be incurred where there is currently only paper version (travelers). The retention of non-lot data based on shipment information is not practical from a tracking standpoint. Cost estimate not available

6. For users of military devices, are there any additional types of data that you would like to see retained?

Commenter	
1	Customer SCD, specifications, and order history
2	---
3	N/A
4	No
5	n/a
6	---
7	Items listed in the EP study seem reasonable.
8	---
9	No
10	(Our company) is not a user of military devices and has no recommendation in response to this question
11	Being a component manufacturer, this question would not be applicable to (Our company).
12	We are a manufacturer, question is not relevant for us. Please note however that A.4.8.1.2 lists items like traceability, audit reports, calibration that are missing from a – m. i. The current version of 38535 has Calibration referencing Z540.3 for retention, however, there are no retention requirements in Z540.3.