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# MEMO

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<b>To</b>	PCB manufacturers	<b>Copy</b>	PCB/SMT WG

**Subject: Reinforcement of ECSS-Q-ST-70-10 for qualification renewal**

## 1 INTRODUCTION

The present memo reinforces the already existing requirements from the ECSS-Q-ST-70-10C for qualification renewal. The present memo does not constitute changes with respect to the common working practice, except for strict implementation of deadlines.

References to specific clauses of ECSS-Q-ST-70-10C are indicated in [brackets].  
References to paragraphs of the present memo are indicated by §.

The qualification status of PCB manufacturers and technology on ESCIES.org and the expiration date are indicated as follows:

- |   |                    |
|---|--------------------|
| a. “qualified”                                | max 2 year period  |
| b. “qualification renewal failed and ongoing” | max 5 month period |
| c. “not qualified”                            | indefinite period  |

## 2 QUALIFICATION PERIOD

The standard duration of qualification for a technology shall be 2 years [6.6.c and 6.7.c.1].

ESA may shorten the duration of qualification in case it is considered that the process control for a critical technology shall be evaluated more frequently. This measure may be implemented in case nonconformances (NC) have been experienced [6.7.e].

During the qualification period, the status shall be indicated as “qualified” and include the expiration date.



### **3 QUALIFICATION RENEWAL**

#### **3.1 Dossier and deliverables**

The following documents and deliverables shall be included in the submission for qualification renewal:

- a. Sample for qualification renewal. This sample shall be taken out of a normal production batch. The sample shall be representative of the highest technological complexity that is qualified.
- b. CoC, demonstrating compliance with ECSS
- c. Microsections used for CoC
- d. Spare coupon including peel test pattern
- e. Test report of the PCB manufacturer performed on second identical sample
- f. Description of materials (laminate, prepreg), lamination sequences, build-up, min insulation distances
- g. Drill file with indication of hole types and dimensions
- h. Qualification status report [6.7.b.1]

#### **3.2 Schedule**

The sample for qualification renewal shall be sent latest 2 months prior to expiration of the qualification period [6.7.b].

ESA commits to complete evaluation of the sample within 2 months. In case there is a delay on behalf of ESA, causing the evaluation to take longer than 2 months, the qualification period shall be extended for the same duration as the delay.

As a consequence, completion of qualification renewal shall be achieved before expiration of the qualification period.

In case requirement [6.7.b] is not achieved because the sample is sent late, the status shall be “not qualified” after the expiration date until completion of qualification renewal.

It is recommended to send the sample earlier than 2 months before expiration. When sending multiple samples, it is recommended to allow for more than 2 months for evaluation.

### **4 FAILURE OF QUALIFICATION RENEWAL ON FIRST SUBMISSION**

In case major NCs are observed on the first sample submission for qualification renewal [6.7.c.2], the following shall be performed:

- a. Investigate root cause, implement corrective actions on associated processes and materials, demonstrate repeatability;
- b. Investigate why NC was not detected by outgoing inspection and perform training if applicable;
- c. Verify how the NC affects running orders and inform customers when applicable.



ESA will evaluate the impact of the NC based on the investigations mentioned in §4a-c as follows:

- i. In case it cannot be demonstrated that the NC is a one-off, the status shall be indicated as “not qualified”.
- ii. In case it can be demonstrated that the NC is a one-off, the status shall be indicated as “qualification renewal failed and ongoing” with an expiration date of maximum 5 months.

In the case ii “qualification renewal failed and ongoing”, the qualification is valid even though a major NC has been observed. The customer is informed about the NC by the changed status and may require additional information.

## **5 SECOND SUBMISSION FOR QUALIFICATION RENEWAL**

### **5.1 Dossier and deliverables**

Only when the following actions are successfully completed, ESA will accept a sample for the second submission of qualification renewal.

- a. The completion of actions §4a-c shall be approved by ESA.
- b. One sample shall be evaluated the PCB manufacturer to generate the test report as required by §3.1.e.
- c. One sample shall be evaluated by an external third-party. The ESA recommended skills training schools can be used.

In case the evaluation of the second sample is unacceptable, the status shall be “not qualified”.

### **5.2 Schedule**

The actions of §5.1 and submission of the sample shall be achieved 2 months before expiration of the qualification status. Because of the 5 month extension of the qualification in accordance with §4.ii, this allows 3 months for completion of the above mentioned actions and submission of the second sample.

In case submission of the second sample is late the qualification status shall be “not qualified”.