



# **ECSS-Q-ST-60-13 ECSS Standard on EEE component selection, control, procurement and use of commercial EEE parts in a space project**

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## Context and organization

ECSS-Q-ST-60-13C – published on October 2013

Update of the ECSS-Q-ST-60-13C standard was proposed by Airbus DS and supported by TAS as part of PSWG discussion topics

PSWG agreed to discuss the changes to the ECSS-Q-ST-60-13C

A PSWG ad-hoc WG was nominated to discuss and propose the changes to be submitted for the update of the standard

A New Work Item Proposal has been prepared and approved by the ECSS Technical Authority in September 2019

Participants :

- Industry: Eurospace represented by ADS, TAS
- Space agencies : ESA, CNES, DLR (supported by TESAT (ADS/D))
- Procurement agencies : ALTER, TESAT (as part of ADS/Eurospace)

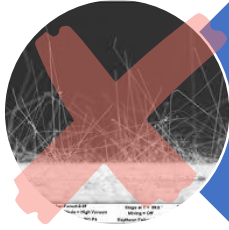
Start date :  
January 2019

End date :  
Mid 2020

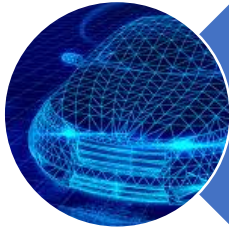
## Rationale

- Market changes : Constellations, reduction of costs and development time
- New criteria for parts selection : use of automotive qualified components, inclusion of passive parts
- Industry Lessons Learned from Constellation programs

## Main changes proposed



Update criteria for the acceptance of pure tin components for the three classes



Criteria for the acceptance of Automotive qualified parts



Extend the scope to commercial passive parts

## Use of pure tin components

**Objective** Retinning not mandatory

**How ?** Compliance with JEDEC standard JESD-201 class 2 requirements for tin whisker mitigation

**Status** Debate currently open on how to verify the compliance as part of the lead free control plan

# Automotive qualification

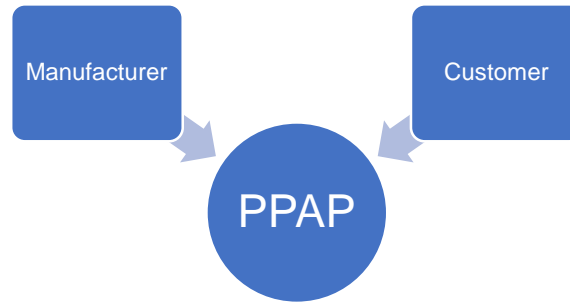
## What is AEC-Q ?

### Automotive Electronics Council Component Technical Committee

- Specifications « Failure Mechanism Based Stress Test Qualification For ... »
  - Integrated Circuits (AEC-Q100)
  - Discrete Semiconductors (AEC-Q101)
  - Discrete Optoelectronic Semiconductors in Automotive Applications (AEC-Q102)
  - Sensors in Automotive Applications (AEC-Q103)
  - Multichip Modules in Automotive Applications (AEC-Q104)
  - Passive components (AEC-Q200)

## Automotive qualification

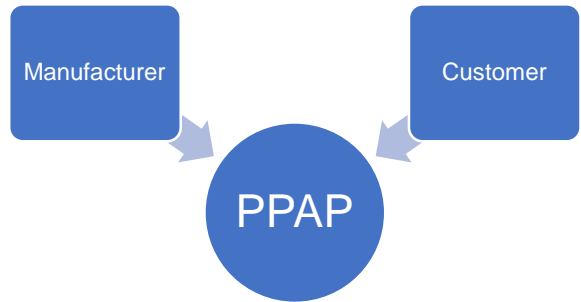
- Automotive : Self certification between a customer and a manufacturer



- High volumes
- Fixed process

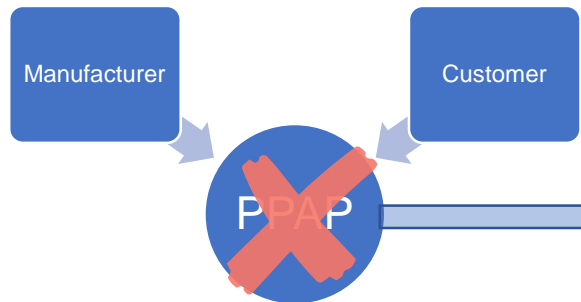
# Automotive qualification

- Automotive : Self certification between a customer and a manufacturer



- High volumes
- Fixed process

- For space users (low volumes compared to automotive)



- Trusted manufacturers (to be defined)
- Reliability data available

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- List of test performed is accessible
  - Results can be available

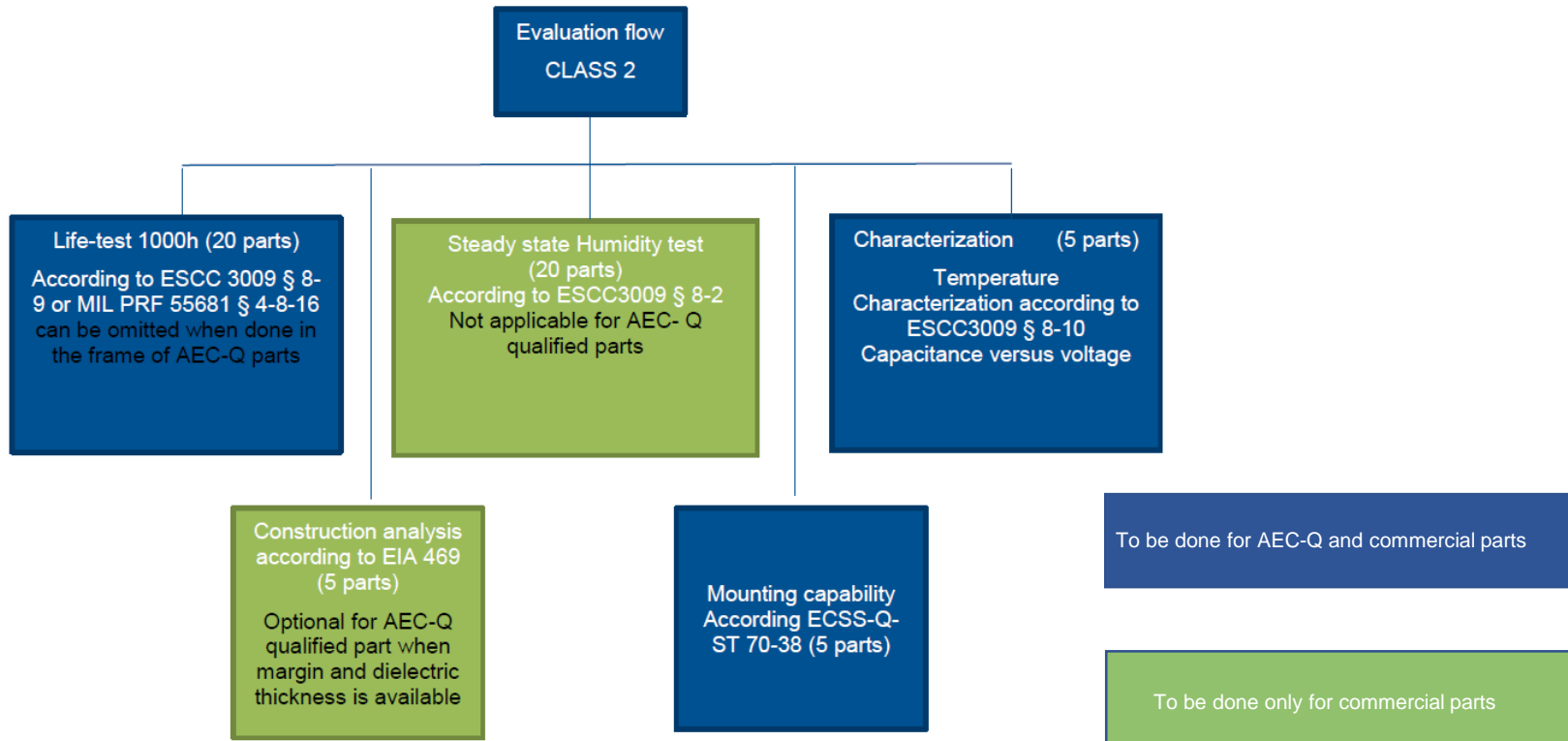


## Introduction of commercial passive parts

- Initiated as a Dedicated working group with members of the ESCC CTB Passive WG
- Outputs :
  - Distinction between AEC-Q200 and commercial level
  - Requirements per family and technologies
  - Requirements aligned with current ones defined for active parts to assess long term reliability and early failures:
    - Evaluation test flow
    - Lot Acceptance flow
    - Screening flow

# Introduction of commercial passive parts

## An Example of a Proposed Draft Evaluation flow for ceramic capacitors under discussion



## What's next ?

**PSWG ad-hoc WG to agree on the final draft of the ECSS-Q-60-13C Rev.1 and associated change requests**

**The draft will be submitted to ECSS secretariat for preparation and release for public review (2+8 weeks)**

**Comments during public review are collected via ECSS.nl. ECSS secretariat provides the comments to the PSWG ad-hoc WG**

**The PSWG ad-hoc WG will disposition the comments received during public review and send the comments back to the ECSS secretariat that provides them to the ECSS TA**

**ECSS TA members will give feedback on how the WG dispositioned comments (2-3 weeks)  
ECSS TA members vote for publication approval**

**Finally revision 1 of ECSS-Q-ST-60-13C will be published on ECSS.nl and publication in the DOORs module of ECSS-Q-ST-6013C Rev.1 will be produced**



SEVILLE - SPAIN 6-8 NOVEMBER

**Thank you for your attention**

