THE ESCC POLICY AND STANDARD WORKING GROUP (PSWG)

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PSWG Organisation & Mission



PSWG mainly aims at :

- ✓ Approving new ESCC generic specifications
- ✓ Improving the ECSS standards regarding component procurement

Recent Achievements

- ✓ Single Phase Qualification :
 - ESCC9000
 - ESCC5000
- ✓ ESCC Test Method conversion to MIL
- ESCC6001 Introduction of 3D+ modules in ESCC system
- ESCC9000P Microcircuits in Plastic Package
- ✓ Lead Free Transition
 - ESCC23500 : New lead finish type
- ✓ Total rewrite / reformat :
 - ESCC3006/3008/3003/3012

- ECSS Standards update :
- ECSS-Q-ST-60
- ECSS-Q-ST-60-13 for COTS procurement
- ✓ ECSS-Q-ST-60-14 on Relifing procedure
- ✓ ECSS-Q-ST-30-11 on Derating of EEE components
- ✓ ECSS-HB-11 TRL scale of commercial parts clarified

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Single Phase Qualification (SPQ)

CHART F0 (INFORMATIVE) - INITIAL (PRODUCT) QUALIFICATION



ESCC 9000

 exclusively for qualification of Wire-bonded Integrated Circuits.

ESCC 5000

 only available for qualification of Packaged Components (at the discretion of the ESCC Executive)

Integrating the evaluation & qualification phases to hit the market
Accelerating the sequence of activities with the same level of confidence



ESCC9000P: generic specification for space plastic encapsulated microcircuits

Conderned categories:

- 1. Monolithic Microcircuits, wire-bonded, lead frame, plastic encapsulated
- 2. Monolithic Microcircuits, wire-bonded, organic substrate, plastic encapsulated
- 3. Monolithic Microcircuits, flip-chip, organic substrate
- The consolidated draft of the generic is expected by june 2021
- Some tricky points but solutions agreed
 - More than 20 members in the Working Group

A further possibility for the manufacturers: Enhanced Commercial Qualified Level (ECQL)?



ESCC 6001: Non-hermetic Hybrids Standard

Built on top of the existing ESCC Process Capability Approval (PCA)

A paradigm shift in the ESCC system

Introduction of 3Dplus modules in the ESCC system:

- Modules manufactured with COTS add-ons
- How to qualify these modules in our system?
 - ✓ Single Phase Qualification
 - ✓ Radiation testing
 - ✓ Requirement for add-on components
 - Creation of Charts





ESCC6001/001 in preparation

ECSS Standard: ECSS-Q-ST-60 EEE components

More than 150 modifications were proposed:

- ✓ Update on PPBI
- ✓ List of forbidden EEE components
- ✓ Use of pure tin on a case-by-case basis with risk mitigation
- ✓ EQM components requirement



Three ESCC documents about electronic parts are concurrently reviewed:

- 1. ECSS-Q-ST-30-11 Derating of EEE components
- 2. ECSS-Q-ST-60-13 Document tailored from ECSS-Q-ST-60
- 3. ECSS-Q-ST-60 Common requirements were reviewed

Draft will soon be opened for public review

ESCC

ECSS Standard: ECSS-Q-ST-60-13 for COTS procurement

Standardization can help to maximize **compatibility**, **interoperability**, **safety**, **repeatability**, or **quality**. It creates the conditions for competition.

3 main topics:

- 1. Authorization of pure tin parts without retinning
- 2. Automotive level recognition
- 3. Commercial passive parts introduction

Main difficulties:

- ✓ How to measure trust in a part?
- ✓ Passive COTS => High diversity of parts technologies.





Draft will soon be opened for public review

New context





1. Readability – trustworthy:

ESCC is a kind of brand. Confidence in the ESCC parts quality shall be high.

2. Parts manufacturer oriented: ESCC shall support European component suppliers

3. Parts customer oriented:

ESCC shall support space projects by providing innovative and competitive parts and bring added value in the supply chain

To find the right balance between these drivers is a challenge

Standards update rate

Space electronic is now a rapidly changing environment →Question raised to introduce fast modifications

> **ECSS-Q-ST-60:** We need to update Quality Level tables

ECSS-Q-ST-60-13C: We need to have an up-to-date standard

Discussion on board testing ECSS

To continue to produce a consistent set of standards









THANKS FOR YOUR ATTENTION

THANKS AS WELL TO THE PSWG MEMBERS