IEC Quality Assessment System, IECQ

Process for Building Check Lists for Assessment, Evidence of Compliance Summaries, and Assessment Reporting Forms within IECQ Aerospace, Defense, and High Performance (ADHP) Electronics Scheme
IECQ OPERATIONAL DOCUMENT

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IECQ Operational Document 3402 –

Process for Building Check Lists for Assessment, Evidence of Compliance Summaries, and Assessment Reporting Forms within IECQ Aerospace, Defense, and High Performance (ADHP) Electronics Scheme

FOREWORD

This publication has been prepared by the IECQ Management Committee (IECQ MC) of the IEC Quality Assessment System for Electronic Components (IECQ).

This publication is directly related to the IECQ System management Basic Rules contained in publications (IEC CA 01 + IECQ 01-S), IEC Harmonised Basic Rules (IEC CA 01) plus the IECQ Supplement (IECQ 01-S) and General Requirements for all IECQ Schemes (IECQ 03-1) and IECQ Aerospace, Defense, and High Performance (ADHP) Component Management Scheme (IECQ 03-4).

IECQ Operational Document IECQ OD 3402 has been prepared by IECQ working group WG04, of IECQ Management Committee (IECQ MC).

Edition 4.1 is an administrative update to update the IECQ logo and title. The 4th edition cancels and replaces the 3rd edition published in [2013-07]. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Revise the name of the IECQ AVIONICS Electronic Component Management Plans (ECMP) Scheme to the IECQ Aerospace, Defense, and High Performance (ADHP) Component Management Scheme,

b) Include provision for control Plans for EEE Parts Management, Lead-free Electronics, Counterfeit Parts, Obsolescence, and COTS Assemblies in the ADHP Electronics Scheme,

c) Includes align with the newly introduced IEC CA 01, IEC Harmonised Basic Rules Edition 2.0,

d) Update all references to the former IECQ 01 document which is now replaced by combined documents known as IECQ System management Basic Rules (IEC CA 01 + IECQ 01-S), IEC Harmonised Basic Rules (IEC CA 01) plus the IECQ Supplement (IECQ 01-S),

e) Inclusion of Normative references.

The text of this International Standard is based on the following documents:

<table>
<thead>
<tr>
<th>Document</th>
<th>Report on MC Consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IECQ-MC/393/CA</td>
<td>IECQ/MC/399/MR</td>
</tr>
</tbody>
</table>

Full information on the report of IECQ MC approval of this publication can be found in the report indicated in the above table.
INTRODUCTION

Taking into account the object of the International Electrotechnical Commission (IEC) as given in Article 2 of the Statutes, the particular object of the IECQ System, operated in conformity with the Statutes and under the authority of the IEC, is to facilitate international trade in electronic components of assessed quality, by providing a global framework for independent assessment and certification.

The object is achieved by the implementation of quality assessment procedures in such a manner that organizations, processes, and components certified as conforming to the requirements of an applicable standard or specification, are acceptable to all participants.

The IECQ System provides manufacturers with a “Supply chain verification tool” for seeking assurance that electronic components, assemblies, processes and related materials conform to declared technical Standards and Specifications.

This process for development of worksheets for utilisation within the IECQ Aerospace, Defense, and High Performance (ADHP) Electronics Scheme is designed to provide an internationally consistent approach for the preparation, conducting and reporting of assessments of Plan Owners electronic Control Plans.

Further information concerning these procedures or any other aspect of the IECQ Scheme, may be obtained at: www.iecq.org
IECQ Operational Document 3402 –

Process for Building Check Lists for Assessment, Evidence of Compliance Summaries, and Assessment Reporting Forms within IECQ Aerospace, Defense, and High Performance (ADHP) Electronics Scheme

1 Scope

This IECQ Operational Document (OD) establishes a process, to develop worksheets that can be used by Plan Owners (PO) and Certification Bodies (CB) to prepare for, conduct, and report results of assessments of the following Aerospace, Defense, and High Performance (ADHP) electronics Control Plans:

– Electronic Component Management Plans (ECMP), prepared in accordance with the requirements of References 1 and/or 2;
– Counterfeit Parts Control Plans (CPCP), prepared in accordance with the requirements of Reference 3 and/or 4;
– Lead-free Control Plans (LFCP), prepared in accordance with the requirements of References 5 and/or 6;
– Obsolescence Management Plans (OMP), prepared in accordance with the requirements of Reference 7 and 8;
– COTS Assembly Management Plans (CAMP), prepared in accordance with the requirements of Reference 9 and 10.

The requirements of this OD are to be used in conjunction with applicable IECQ System management Basic Rules (IEC CA 01 + IECQ 01-S), General Rules of Procedures (IECQ 03-1), IECQ ADHP Rules of Procedure (IECQ 03-4) and Operational Documents (OD) as listed in normative references Clause 2.

In the event of conflict between the provisions of this document and any other directly or indirectly referenced provisions, the provisions of this document shall take precedence.

2 Normative references

2.1 General

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. The IECQ Management Committee shall decide the timetable for the introduction of revised editions of the documents. For undated references, the latest edition of the referenced document (including any amendments) applies.

The IECQ System management Basic Rules and Procedures prescribed in the following documentation shall be used for the IECQ AP assessments where applicable.

IEC CA 01, IEC Conformity Assessment Systems – Basic Rules

IECQ 01-S, IECQ Supplement to Harmonized Basic Rules IEC CA 01

IECQ 02, General Requirements for the Acceptance of IECQ Certification Bodies into the IECQ System

IECQ 03-1, General Requirements for all IECQ Schemes
IECQ 03-4, IECQ Aerospace, Defense, and High Performance (ADHP) Component Management Scheme

IECQ OD 3405, IECQ Operational Document Part: 3405 - Procedures for the issuing of IECQ Certificates of Conformity for Aerospace, Defence, and High-Performance electronics Control Plans

IECQ OD 3406, IECQ Operational Document Part: 3406 - Procedures for the issuing of IECQ Certificates of Implementation for Aerospace, Defence, and High-Performance electronics Control Plans

IECQ OD 3407-1, IECQ Subcontractor ECMP Programme Assessment, Evidence of Compliance Summary and Assessment Reporting Form, related to Assembly Subcontractor Quality and Process Management

SAE AS9102, Aerospace First Article Inspection Requirement

2.2 Referenced Standards

(The documents listed below are also called referenced standards in this document. The revisions current at the time of assessment are to be used in the assessments, unless otherwise specified)

1) IEC TS 62239-1, Process management for avionics – Management plan – Part 1: Preparation and maintenance of an electronic components management plan;
2) SAE EIA-STD-4899, Requirements for an Electronic Components Management Plan;
3) SAE AS5553\(^1\), (R) Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition;
4) IEC TS 62668-1, Process management for avionics – Counterfeit prevention – Part 1: Avoiding the use of counterfeit, fraudulent and recycled electronic components;
5) SAE GEIA-STD-0005-1\(^2\), Performance Standard for Aerospace and High Performance Electronic Systems Containing Lead-free Solder - Formerly TechAmerica GEIA-STD-0005-1;
6) IEC TS 62647-1, Process management for avionics – Aerospace and defence electronic systems containing lead-free solder – Part 1: Preparation for a lead-free control plan;
7) SAE STD-0016\(^3\), Standard for Preparing a DMSMS Management Plan;
8) IEC 62402, Obsolescence management- Application guide;
9) SAE EIA-933\(^4\), Standard for Preparing a COTS Assembly Management Plan;
11) AS6462B\(^5\), AS5553A, Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition Verification Criteria.

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\(^1\) Reprinted with permission from the published version of SAE document SAE AS5553 ©2017 SAE International.
\(^2\) Reprinted with permission from the published version of SAE document SAE GEIA-STD-0005-1 ©2017 SAE International.
\(^3\) Reprinted with permission from the published version of SAE document SAE STD-0016 ©2017 SAE International.
\(^4\) Reprinted with permission from the published version of SAE document SAE EIA933 ©2017 SAE International.
\(^5\) Reprinted with permission from the published version of SAE document SAE AS6462B ©2017 SAE International.
3 Terms and definitions

The basic definitions concerning conformity assessment contained in ISO/IEC 17000 apply.

For the purpose of the IECQ Approved Process Scheme, the definitions contained in IEC CA 01, IECQ 01-S, IECQ 02, IECQ 03-1 and IECQ 03-4 apply.

4 Technical requirements (Objectives) – principals

As defined in the referenced standards, ADHP Plans shall document the processes used to address each of the requirements listed in the relevant industry standards (any or all of References 1-10). The relevant industry standards state objective (requirements) to be accomplished; they do not require specific tasks (actions) to be performed, specific data to be collected or reports to be issued. They allow for alternate approaches to be used to meet some of the objectives. Where one of the allowed listed alternate approaches is used to accomplish an objective for the whole plan, the other listed alternatives are no longer applicable.

This Edition 4 of IECQ OD 3402 provides for the use of a “☐ NA NA=Non-applicable” option in the “ADHP Assessment Compliance Record” column to indicate where such alternate approaches are not in use.

It is recommended that links to process documentation and compliance data be established for presentation during the ADHP Control Plan assessment. It is recommended that the worksheets developed according to this document be used to record and report the results of the assessment.

The referenced standards contain widely varying technical requirements for the ADHP Control Plans listed above; however, there is sufficient commonality in the way the requirements are stated, and for documenting the processes required by the references, that a single process may be used to develop the worksheets for all the assessments.

The documentation and examples listed in the columns “Documentation Expected” and “Examples of Records of Compliance” are not intended to be a comprehensive tabulation of all the items that must be included in the given ADHP Control Plan. It is the prerogative of the Plan Owner to select the amount and type of documentation and justification required to satisfy the requirements of the referenced standards.

The right column, “Assessment Compliance Record” is for the use of the assessment team to record their finding for each of the referenced standard requirements during the assessment. The column will also be a permanent record of any “judgement” decisions made by the assessment team during the assessment and should be archived by the Plan Owner and IECQ CB.

5 Instructions for Use

The worksheets described in Table 1 of this OD are intended for use in guiding assessments, documenting evidence of compliance, and reporting assessment results when completing:

a) Conformity assessments to IECQ OD 3405 and
b) Implementation audits to IECQ OD 3406,

which have no customer customisations or modifications to the external standard being audited.

Table 2 shall be used when customers customise or modify Implementation audits external standard requirements. The Certifying Body shall use the checklist template herein in Table 2 to create custom audit checklists based on the mandatory ‘shall’ requirements of the client’s
internal procedures that have been approved by the customer. This activity will require extensive planning to determine the level of detail required for these custom checklists.

At the discretion of the user, other forms may be used, provided that they include all the information included in the worksheet described here.

A separate worksheet shall be used for each ADHP Plan assessed.

Specific line items on the worksheet may be filled in by the assessor, or by the Plan Owner, as determined by the roles of the Plan Owner and the assessor in the assessor.

**Referenced Standard Clause:** Reference to the specific clause in the given referenced standard being addressed.

**Requirement:** Description of the clause being addressed describing what activity is being evaluated (denoted by the word “shall”).

**Documentation expected:** A description of appropriate and acceptable documentation to verify that the clause being addressed has been included in the Plan Owner’s process and that action has been taken to comply with the requirement.

The documentation listed is not a mandatory technique for satisfying the applicable clause. It is an acceptable and valid approach. The Plan Owner has the option of presenting other evidence to demonstrate compliance with the clause.

**Demonstrated by Procedure:** It is a requirement that the Plan Owner have a written procedure addressing the clause. The Plan Owner is to enter the reference nomenclature for the appropriate procedure in this column.

**Examples of Records of Compliance:** Acceptable evidence that the clause is being implemented and appropriate records being kept to demonstrate compliance.

**ADHP Assessment Compliance Record:** This column is for the ADHP assessment team to record their findings. Since in many cases, it is expected that the Plan Owner will use one of the suggested compliance options listed, a check box is provided to expedite recording satisfactory compliance.

To ensure clarity, when multiple options (i.e. alternate approaches as listed in the referenced document are listed, the correct response is to select the “☐ NA NA=Nonapplicable” option in the “ADHP Assessment Compliance Record column” (column 6) for the options NOT used.

For those situations where the Plan Owner has selected a different approach to compliance, the assessor shall record the approach used in sufficient detail that subsequent assessors have a complete and understandable summary of the reasons for approval.

**Acceptance and approval of reports:** The ADHP assessment report needs to be approved for issue by the Lead Assessor (LA). If the assessment team also includes a Technical Expert (TE), the assessment report shall be approved by consensus of both the assigned LA and the assigned TE.
<table>
<thead>
<tr>
<th>External standard</th>
<th>Title</th>
<th>Audit checklist</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE EIA-STD-4899 revision C</td>
<td>Requirements for an Electronic Components Management Plan</td>
<td>OD3402-2 issue 1</td>
<td>Refers to the verification annex in SAE EIA-STD-4899 C</td>
</tr>
<tr>
<td>IEC TS 62239-1:2015 Edition 2 and SAE EIA-STD-4899 revision C</td>
<td>Requirements for an Electronic Components Management Plan</td>
<td>OD3402-3</td>
<td>Combined audit of the 2 standards</td>
</tr>
<tr>
<td>SAE AS5553 revision B</td>
<td>Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition.</td>
<td>IECQ OD 3706-1 Ed.2 or SAE AS6462B</td>
<td>Many clients will move to revision C immediately it is published. Can use AS6462B for some customers when published.</td>
</tr>
<tr>
<td>SAE AS5553 revision C</td>
<td>Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition.</td>
<td>IECQ OD 3706-1 Ed.3 or SAE AS6462C</td>
<td>To be published when SAE AS5553 revision C is published later in 2017. Can use AS6462C for some customers when published.</td>
</tr>
<tr>
<td>IEC TS 62668-1 Edition 3</td>
<td>Process management for avionics – Counterfeit prevention – Part 1: Avoiding the use of counterfeit, fraudulent and recycled electronic components.</td>
<td>IECQ OD 706-3 Ed.1</td>
<td></td>
</tr>
<tr>
<td>SAE GEIA-STD-0005-1 revision A</td>
<td>Performance Standard for Aerospace and High Performance Electronic Systems Containing Lead-free Solder - Formerly TechAmerica GEIA-STD-0005-1.</td>
<td>IECQ OD 3402-4</td>
<td>TBD</td>
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<tr>
<td>SAE STD-0016 issued 2011-08-01</td>
<td>Standard for Preparing a DMSMS Management Plan</td>
<td>IECQ OD 3402-6</td>
<td>TBD</td>
</tr>
<tr>
<td>Reference</td>
<td>Description</td>
<td>IECQ OD</td>
<td>TBD</td>
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<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>IEC 62402 edition 1</td>
<td>Obsolescence management- Application guide</td>
<td>IECQ OD 7</td>
<td>TBD</td>
</tr>
<tr>
<td>SAE EIA-933 issued 2015-03-01</td>
<td>Standard for Preparing a COTS Assembly Management Plan</td>
<td>IECQ OD 8</td>
<td>TBD</td>
</tr>
<tr>
<td>Clause in applicable client’s internal procedure</td>
<td>Mandatory Requirement from client’s internal procedure</td>
<td>Documentation Expected</td>
<td>Demonstrated by Procedure: (Fill In the Documentation Procedure numbers in this column)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>List the clause number</td>
<td>State requirement with a direct quote from the applicable referenced standard. List each shall statement separately.</td>
<td>Describe the Plan Owner’s process documentation that is expected to satisfy the requirement.</td>
<td>List the Plan Owner’s process documents that the Plan Owner asserts will satisfy the requirement. (Each document listed shall have a document number.)</td>
</tr>
<tr>
<td></td>
<td>The worksheet contains a separate line for each shall in the client’s internal procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The worksheet contains as many rows as there are “shall” in the client’s internal procedures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<<Person Signing>>
<<Persons title / position>>
<< Day  Month  Year>>

Appointed IECQ TE accepts and approves this report
<<Organisation if applicable>>
<<Person Signing>>
<<Persons title / position>>
<< Day  Month  Year>>

*** End of Worksheet ***