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Quality Manual

CMC ELECTRONICS - PROPRIETARY DATA

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REVISION PAGE

REVISION LETTER	KEY PAGES OR SECTIONS AFFECTED	DATE
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B	Title, A, i, 2, 3, 4, 6 thru 28 revised.	18 September, 1996
C	Title, A, 1 thru 8	15 January, 1997
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E	Title, A, 4, 6, 7, 11	18 August, 1998
F	Title, A, i, 1 thru 13, 16 thru 18, 25 thru 27	26 March, 1999
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S	Updated all sections to meet the requirements of ISO9001:2015, AS9100D and ISO14001:2015	12 June, 2017
T	Title, A, 5, 10, 26, A.2 revised. Updated Org chart, updated scope section, corrected paragraph numbering to match AS9100 rev D	04 April, 2018
U	Title, A, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 14, Annexe A1 (reference table) All references to Esterline were replaced. Org chart was updated. Quality policy and Environmental policy were updated. Esterline system references no longer valid were removed (EOS, EEA,…)	15 August, 2019

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REVISION LETTER	KEY PAGES OR SECTIONS AFFECTED	DATE
V	Minor updates to incorporate organizational change Title, Section 4.4 clarified link to PEARS. Section 5.3 added information on BUM roles in org and role of HR within EMS. Updated Org chart. 5.3.1 Updated with current QA org. Updated 6.1 to clarify how risks are addressed. Clarified section 7.3. Updated 8.1 to clarify how Operational Risks are addressed.	20 May, 2020
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Y	Title, B, 31 revised. Updated to clarify the confusing wording as identified by the BSI auditor at the AS9100D BSI audit in Sugar Grove held on October 26-28, 2020.	03 November, 2020
Z	Not used.	
AA	Title page, 2, 3, 4, 7, 8, 9, 30 revised Updated org chart to new organization. Updated titles with current QA organization. Updated to include CMC mission and vision. Removed Kanata as a site.	19 May, 2021
AB	Title page, i, ii, 2, 3, 4, 5, 7, 8, 9, 13, 21, 28 revised. Removed Ottawa, Ontario. Updated Interaction of processes. Updated Quality Policy. Updated responsibilities for Health and Safety Program. FIGURE 2 Corporate organization removed VP Government Relations. Added reference to Strategic planning (under Sharepoint). Replaced Horizon newsletter by Internal Communication bulletin, removed Qualigram. Replaced the Director of Supply chain Planning and Purchasing by Director Quality Assurance for the SMQA group. Removed frequency of customer's evaluation satisfaction and annual customer satisfaction survey.	10 June, 2022
AC	Title page, B, 4, 7, 8, 12 revised. Reference to Regulation (EU) 2017/373 ATM/ANS added in Navigation database section. Updated org chart to new organization. Updated Management Representative contact information. Training records now located in the Learning Management System.	16 January, 2024

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1 INTRODUCTION

1.1 Company Primary Activities and History

In 1895, Guglielmo Marconi was one of the first to devise a means of transmitting electrical impulses over short distances without wire, i.e., wireless. In December 1901, the first transoceanic wireless telegraphy signals were transmitted from southwest England and received in St. John's, Newfoundland. The Marconi Wireless Telegraph Company of Canada was formed in August 1903. In 1925, the name was changed to Canadian Marconi Company. On February 7, 2000, the name was changed to BAE SYSTEMS CANADA INC., and was again changed to CMC Electronics Inc. (hereinafter also referred to as CMC, or "the Company") on April 10, 2001 subsequent to the purchase of the company by ONCAP L.P. On March 14, 2007 Esterline Corporation (NYSE:ESL www.esterline.com) acquired CMC Electronics, the acquisition by TransDigm Group Inc. (NYSE:TDG (Common), www.transdigm.com) was completed on March 14th 2019.

CMC Electronics has been designing and building communication and electronic systems since 1903. CMC also operates for its own needs a calibration and repair facility for test and measuring equipment as well as mechanical and mass metrology, traceable to the National Research Council of Canada Standard.

2 RELATED DOCUMENTS

- ISO 9001:2015 Quality Management System Requirements
- ISO 9000:2015 Quality Management Systems-Fundamentals and Vocabulary
- ISO 9004:2015 Quality Management Systems-Guidelines for Performance Improvements
- ISO 14001:2015 Environmental Management System Requirements
- ISO 14004:2015 General guidelines concerning the principles, the systems and the techniques of implementation
- RTCA DO-178C
- SAE AS9100 rev D Aerospace Standard
- AS9115 rev A Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations - Deliverable Software(Supplement to 9100:2016)
- All Procedures referenced within the pages of this document
- All Work Instructions that directly or indirectly have impact on product or process.
- All Forms used in conjunction with the procedures and work instructions described
- Appendix A provides an index of the applicable Quality System procedures.

3 ACRONYMS

ATP	Acceptance Test Procedure
CAR	Corrective Action Request
CMC	CMC Electronics Inc.
CMM	Capability Maturity Model
DFSS	Design For Six Sigma
ECO	Engineering Change Order
EDOV	Electronic Distribution and On-line Viewing
EHS	Environment, Health and Safety
ESD	Electrostatic Discharge
ISO	International Standard Organization
NCR	Nonconformance Report
OBS	Operations Breakdown Structure
PRMA	Person Responsible for Manufacturing Activities
PRQ	Person Responsible for Quality
QA	Quality Assurance
RTCA	Radio Technical Commission for Aeronautics
WHMIS	Workplace Hazardous Material Information System
WI	Work Instruction

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4 CONTEXT OF THE ORGANIZATION

4.1 Understanding the Organization and its Contexts

CMC Electronics (www.cmcelectronics.ca) designs, produces, sales, repairs, overhauls and supports leading technology electronics products for the aviation and global positioning markets. CMC's focus is on delivering innovative avionics solutions to its customers worldwide. Its principal locations are in Montreal, Quebec and Chicago, Illinois. CMC's corporate headquarters and principal engineering/manufacturing plant is located in Montreal, Quebec. A network of sales and service agents and representatives complement its support activities worldwide. It evolves in a highly competitive and regulated environment.

CMC is a wholly owned subsidiary of TransDigm Group Inc. (NYSE:TDG (Common), www.transdigm.com), a specialized aerospace and defense company headquartered in Cleveland, Ohio.

CMC's philosophy is based on the Transdigm objectives. Transdigm believes in a value-driven operating strategy focused on obtaining profitable new business, improving our cost structure and providing highly engineered value-added products to customers. The three main objectives are Productivity, Right Pricing (value) and Profitability. These values are the foundation on which CMC organization and its own value system are built, all objectives and continuous improvement initiatives are driven from these core values.

Vision and Mission Statement

CMC's vision is to become the most efficient and dependable supplier of avionics solutions with a strong position on major aircraft programs.

CMC's mission is to deliver avionics solutions of the utmost reliability, fully tailored to customers expectations.

CMC determines, monitor and reviews information about issues through its strategic planning and policy deployment. A more detailed table explaining the internal and external issues relevant to CMC and its strategy is maintained within the Quality Management Review.

4.2 Understanding the Needs and Expectations of Interested Parties

CMC has determined the following interested parties and how to monitor and review relevant information. A detailed listing is also reviewed during the Quality management review:

- Customers (Original Equipment Manufacturers, System integrators, Airlines, Repair & Overhaul organizations); they expect high quality products delivered on time at the lowest possible cost. CMC monitors its on-time delivery, cost reduction and quality escapes to customers.
- Suppliers; they expect fair level of business and proper feedback on their performance. CMC monitors the performance of key suppliers and send them monthly feedback about their delivery and quality performance.
- Regulatory authorities: they expect CMC to comply with Aviation requirements and maintain airworthy products at all times. CMC has established various procedures to monitor the airworthiness of its civil certified products and maintains all required certifications.
- Government agencies; they expect CMC to meet all applicable laws about environment, employment, export compliance, health and safety and fiscal responsibilities. CMC performs legal reviews of all environmental requirements at all government levels. CMC have people responsible to maintain awareness of all export compliance laws and processes and checklists are in place.

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- Corporate shareholders; they expect CMC create value and meet its financial objectives. CMC establishes yearly budgets that are monitored monthly. Corporate has established various indicators that monitored also on a monthly basis.
- Employees expect that they are given all required tools, guidance and training in order to perform their function in a safe and diligent manner. As most of them are unionized they expect a fair application of the various bargaining agreements.
- The neighborhood expects an environment that meets all applicable laws and regulations.

4.3 Determining the Scope of the Quality Management System

CMC Electronics Inc. developed and implemented a Quality Management System that is continuously maintained for effectiveness and process improvements in accordance with the requirements of ISO 9001:2015, AS9100 rev D, AS9115 rev A (when required by customers), Nadcap AC7120 for special electronics process and MIL-PRF-38534. The means to achieve all applicable requirements are documented in this Quality Manual and associate procedures as described in section 7.5. In addition, CMC complies to NIST 800-171 for Protecting Unclassified Information in Nonfederal Information Systems and Organizations and has implemented all elements required to maintain a culture of information security and cybersecurity.

CMC purchases (where possible), subcontracts and assembles products based on IPC-A-610 class 3 and J-STD-001 class 3.

This manual is the top-level document of the CMC Electronics Inc. Quality and Environmental Management System. The purpose of this manual is to define and describe the Quality and Environmental System, to define authorities and responsibilities of the management personnel involved in the operation of the system, and provide general procedures for all activities comprising the Quality and Environmental System. Another purpose of this manual is to present the quality and environmental system to our customers and other interested parties, and to inform them of what specific controls are implemented at CMC Electronics Inc. to assure adequate quality and environment management.

The Quality Management System scope for both Montreal and Sugar Grove sites is design, manufacture, sale and support of high technology electronic products including avionics, communications, and specialized electronic components and subcontracting of electronic assemblies.

The Environmental Management System scope is the management of environmental risks associated with manufacture (stencil printing, soldering, part placement, bonding, coating, machining and painting), design, sale and support of the high technology electronic products including avionics, communications, specialized electronic components and subcontracting of electronic assemblies.

The Environmental Manual applies to the facility in Saint-Laurent, Qc, Canada only. This Quality Manual applies to the activities of CMC Electronics in the following two locations (environmental applies only to Montreal):

600 Dr. Frederik-Philips Blvd.
Ville Saint-Laurent,
Québec, Canada
H4M 2S9

84 N Dugan Rd
P.O. Box 250
Sugar Grove,
IL 60554, USA

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4.3.1 Navigation database

All navigation databases produced by CMC for its navigation products are compliant with Regulation (EU) 2017/373 ATM/ANS and generated in accordance to the requirements of RTCA/DO-200B "STANDARDS FOR PROCESSING AERONAUTICAL DATA" and the guidance of FAA Advisory Circular 20-153B "ACCEPTANCE OF DATA PROCESSES AND ASSOCIATED NAVIGATION DATABASES".

4.4 Quality and Environmental Management System and their Processes

The means to achieve all applicable requirements in section 4.3 are documented in this Quality Manual and associated procedures as described in section 7.5.

CMC's QMS and EMS support the philosophy of continuous improvement and our Quality and Environment Policy. The Quality and Environmental System Procedures detail the Quality and Environmental requirements that must be satisfied in order that high quality products and services are provided to customers and that contract requirements are fully met and the environmental aspects are control as much as possible and also meet all applicable statutory and regulatory requirements. Figure 1 describes the Quality Management System. Each document identifies the inputs (trigger), outputs (deliverables) and functions contributing to the process. All processes and their interaction are described per the Ossad method (matrix flowcharting). So for example the Key process as shown in Figure 1. These key processes and Process Effectiveness Assessment review (PEARS / key indicator) are reviewed at the Quality Management Review.

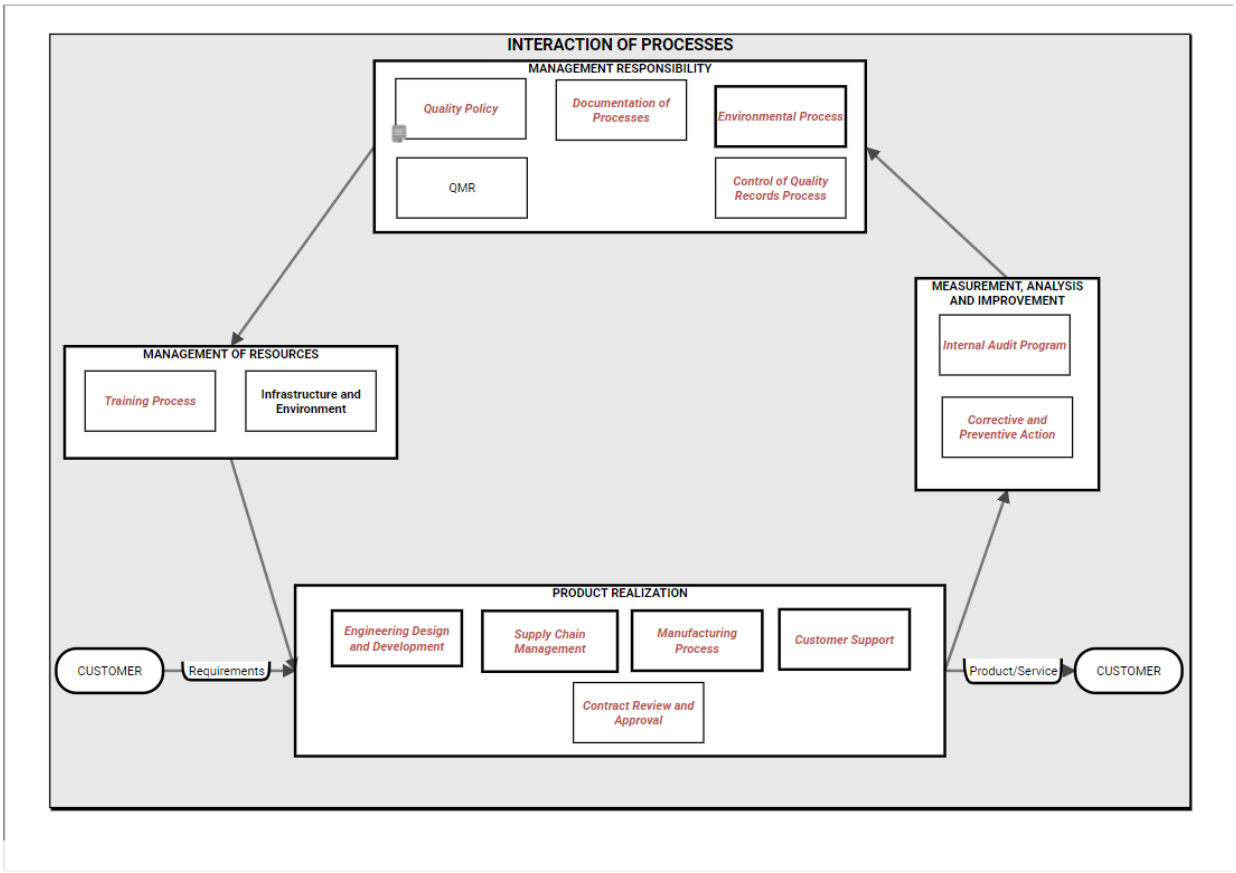

Figure 1: Quality Management System

5 LEADERSHIP

5.1 Leadership Commitment

5.1.1 General

Senior management is actively involved in maintaining the Quality and Environmental Management System. It provides the vision and strategic direction for growth of the Quality and Environmental Management System, and establishes Quality and Environmental objectives and the Quality and Environmental policies taking into account the context and strategic direction of the organization.

To continue to provide leadership and show commitment to the improvement of the Quality and Environmental Management System, senior management communicates the importance of fulfilling customer, legal and regulatory requirements through the periodic communication meetings as well as by conducting management reviews to ensure the availability of resources, risk assessments are understood and the Quality Management System achieves its intended results.

5.1.2 Customer Focus

CMC Electronics strives to identify current and future customer needs to meet customer requirements and exceed customer expectations.

Senior management ensures that customer requirements are transformed into clear requirements through the processes described in section 8.2, and that these requirements are met. The customer satisfaction measurement is described in section 9.1.2.

The management team shall ensure the product conformity and on-time delivery performance are measured, reviewed and appropriate action is taken if planned results are not, or will not be achieved.

The management team ensures all applicable statutory and regulatory requirements are determined, understood, and consistently met. The risks and opportunities that can affect conformity of products and services and the ability to enhance customer satisfaction are determined and addressed with using proper risk analysis method including, but not limited to, DFMEA, PFMEA and control plans.

The product and service conformity and on-time delivery are measured at least monthly and appropriate action is taken if planned results are not, or will not, be achieved.

5.2 Policies

The management team ensures the policies are communicated to all employees and available to all interested parties. For that purpose, the Quality Manual is posted on the company's web site and is viewable by everyone.

5.2.1 Quality Policy

At CMC Electronics, we are committed to continuously improve our design, manufacture, sale and support activities in order to deliver avionics solutions of the utmost reliability, meeting all requirements and well tailored to customer's expectations.

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CMC Electronics Inc. is a world leader in the design, manufacture, sales and support of high-technology electronic products. This Quality Policy is established by senior management to provide the framework to develop and improve the Quality Management System, planned and executed in conjunction with other management functions, such that quality awareness is an integral part of the business strategy.

The Quality Policy is provided and explained to every employee, such that it is implemented and maintained at all levels of the organization. It is included in new employee training on the Quality Management System. It is posted in prominent places throughout the facility to maintain high standards within our organization.

Management reviews the Quality Policy at management review meeting and at each update of the Quality Manual to determine the policy's continuing suitability for our organization (see section 9.3 Management Review).

5.2.2 Environmental Policy

CMC is committed to reduce the impact of its activities (manufacture, sales and support of electronics products) on the environment. The main goal is to continuously improve its environmental management system and associated objectives and to adhere to all legal or other environmental requirements in order to prevent pollution and protect the environment.

CMC Electronics Inc. is a world leader in the design, manufacture, sales and support of high-technology electronic products. This Environmental Policy is established by senior management to provide the framework to develop and improve the Environmental Management System, planned and executed in conjunction with other management functions, such that environmental awareness is an integral part of the business strategy.

The Environmental Policy is provided and explained to every employee, such that it is implemented and maintained at all levels of the organization. It is included in employee training on the environmental management system. It is posted in prominent places throughout the facility to maintain high standards within our organization.

Management reviews the Environmental Policy at management review meeting and at each update of the Quality & Environmental Manual to determine the policy's continuing suitability for our organization (see section 9.3 Management Review).

5.3 Organizational roles, responsibilities and authorities

The President is responsible for the management of CMC Electronics, for the issue and follow-up, in collaboration with the VP of Operations and the Director Quality Assurance, of the implementation of the Quality and Environmental Policy and objectives. He also provides the resources necessary to facilitate the development and the implementation of the Quality System. He is chairman of the management reviews and has the authority to ensure the effective implementation of the Quality System.

The Vice-Presidents and Business Unit Managers are responsible for all activities within their respective sector. They are responsible for supporting the Quality Policy by providing adequate resources necessary to achieve the organization's objectives and to ensure customer satisfaction. They ensure that customers' requirements are known and understood at all times by everyone involved. They are responsible for all the business associated with the Products that they manage. This includes Marketing and Sales, Design and Development as well as timely deliveries of the manufactured products to their customers.

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The Director of Operations chairs the Environment and Health and Safety inter site meeting and has the authority to ensure the effective implementation of the Environmental and Health and Safety System.

The Manager of Manufacturing Engineering and Facilities is responsible for the Health and Safety Program established within CMC and assigns resources necessary to meet the corporate requirements. The Supervisor Maintenance, Environment, Health & Safety Reports to the Manager of Manufacturing Engineering and Facilities and follows up on actions to meet requirements of the Health and Safety System to ensure they are carried out in a timely fashion.

The Director Airworthiness and Quality Engineering is the management representative for the Quality requirements under airworthiness regulations. The Director Quality Assurance is responsible for the company Quality System. The Environmental committee is chaired by the Supervisor Maintenance, Environment, Health & Safety. The committee follows up on actions to meet requirements related to the Environmental Management System to ensure they are carried out in a timely fashion.

Sales responsibilities include pursuit plans, territory development and other related activities.

CMC Electronics uses files with job description and organization charts to identify responsibilities and authorities within the organization. Responsibilities are also identified in each procedure and work instruction.

All employees are responsible to follow processes and procedures that make up the Quality Management System, the Environmental Management System and the Health and Safety System.

The corporate organization of CMC Electronics is shown in Figure 2 below.

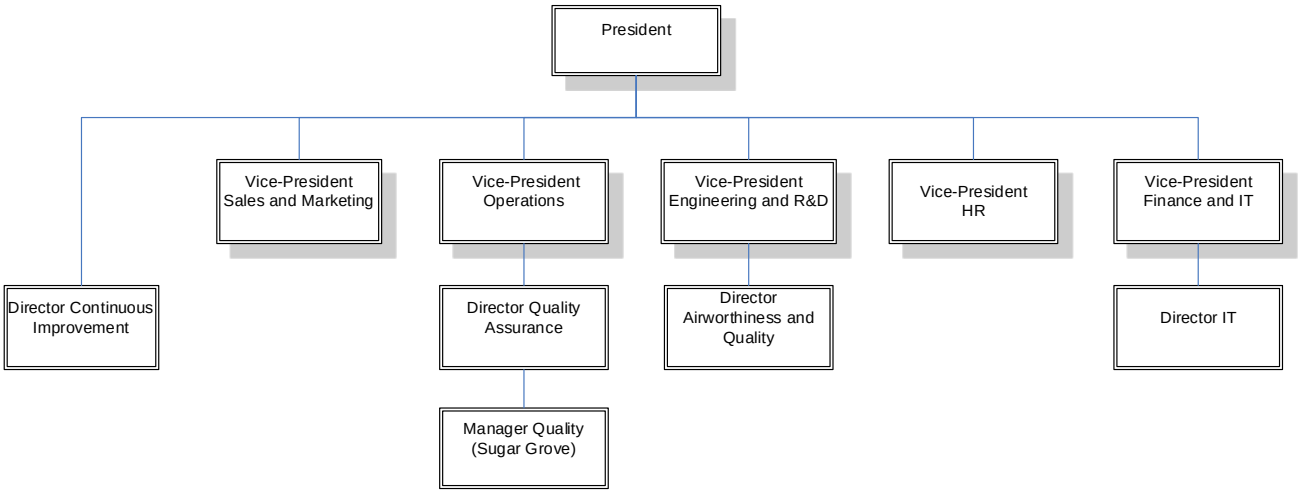

Figure 2. Corporate Organization

5.3.1 Management Representative

The President has appointed the Director Quality Assurance with the authority and organizational freedom and unrestricted access to top management to:

- Ensure that the requirements of the ISO 9001, ISO 14001 Quality and Environmental Management System Standard, AS9100 Aerospace Standard are established, implemented and maintained;
- Resolve quality and Environmental management issues.
- Report at least once a year a review of the performance of the Quality and Environmental Management System to senior management and any need for improvement and maintain records of those reviews; and
- Interface with customers, Government and regulatory agencies on matters relating to the Quality and Environmental Management System.

The Director Quality Assurance has the above mandate for CMC.

The appointed Director Quality Assurance mailing address is:

Marc-André Cloutier
Director Quality Assurance
CMC Electronics Inc.
600 Dr. Frederik Philips Blvd.
Saint-Laurent, Quebec
H4M 2S9
Telephone: 514-748-3000 Ext. 4518
E Mail marc-andre.cloutier@cmcelectronics.ca

In addition, CMC has a site Quality Representative in Sugar Grove. The appointed Quality Manager Representative mailing address is:

Darren Whaley
Quality Manager
84 N Dugan Rd
P.O. Box 250
Sugar Grove,
IL 60554, USA
Telephone: 630-466-2159
E Mail darren.whaley@cmcelectronics.us

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6 PLANNING

6.1 Actions to address risks and opportunities

Risks and opportunities related to the QMS are identified and addressed within each process listed in the Interaction of Processes graph (see 4.4). For certain processes risks are processes through checklists and sometimes through the process itself. The method, in which risks are identified, mitigated and communicated are specific to the department and type of processes being completed by those departments

Effectiveness is evaluated through the KPI's, internal audits and even through opportunities for Improvement and corrective action follow ups.

6.2 Quality objectives and planning to achieve them

CMC defines its quality objectives based on the 3 main objectives of Transdigm: Profitable business, Productivity and Right pricing and other requirements specific to CMCs context.

Airworthiness & Quality System are key to Value Creation & Careful Management. They ensure CMC to continue to be a designer, manufacturer and maintainer of highly engineered aerospace products, sub-systems & systems that meet regulatory requirements to be airworthy for installation on Commercial & Military Aircrafts.

Standardization facilitates productivity - do it once and do it right; Improve costs – engineer for manufacturability. Sustaining Engineering / Maintenance and Continuous Airworthiness for aftermarket updates and content.

A good Quality system is a pre-requisite to winning new business opportunities with key OEMs and aircraft manufacturers.

At the beginning of each new fiscal year, senior management sets the main Quality and Environmental objectives and ensures that they are consistent with both the policies and values. As a minimum, targets must be set for product conformity and on-time delivery performance.

Business Units, Operations, Engineering and Human Resources then establish their own internal objectives accordingly, reviews them monthly and take appropriate action to meet them.

These objectives may be broken down into sub-objectives and communicated to the appropriate level of the organization. In the absence of any overriding contractual requirements, the safety and reliability of the product has been considered and addressed.

The strategic planning to meet objectives is found on CMC's SharePoint site.

6.3 Planning of changes

CMC's Quality Management and Environmental Management Systems are documented and designed in order to guarantee that all products and processes meet all the requirements of our customers.

Satisfaction of specified requirements is achieved through the effective implementation of all processes and related Quality System Procedures and work instructions in day-to-day activities. The Quality Management System documentation is designed to achieve quality in

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the definition of the needs of the customer, in the planning and design of product realization, in the conformance to the product design and in the support throughout the product life cycle.

The Quality Management System reviewing or planning is performed prior to the addition of significant changes that have an impact on the organization's Quality Management System in order to minimize the risk of negative effects. The required changes are discussed and documented in the Quality Management Reviews (QMR) to ensure the integrity of the systems and the availability of resources. The allocation or reallocation of responsibilities and authorities can be discussed during the QMR meeting, President's staff meeting or at the time the procedures (level 1 to 3) are updated.

7 SUPPORT

7.1 Resources

7.1.1 General

Management ensures that adequate staff (including external providers as needed), equipment and materials are available in order to:

- Implement, maintain and improve the Quality Management System processes.
- Ensure customer satisfaction.
- Meet the quality and environmental objectives.
- Consider the constraints and capabilities of existing internal resources and what can be externally provided.

7.1.2 People

Anyone in CMC Electronics having an assignment associated with any of the processes of the Quality and Environmental Management System is competent through education, skill, training and experience as necessary. Requirements for education, skills, training and experience are found in the job descriptions maintained by the Human Resources department.

7.1.3 Infrastructure

The organization determines the needs for each new project or significant change to an existing project. Consideration is given to the following:

- Workspace
- Facilities associated with the workspace
- Equipment – hardware, software and back-up
- Services for support

The Infrastructure is determined and maintained to achieve conformity to product and development requirements.

7.1.4 Environment for the operation of Processes

CMC Electronics considers and addresses many different aspects of the work environment. The most significant ones are listed below:

- Facilities;
- Health and safety;
- Environmental Laws and Regulations;
- Housekeeping and cleanliness;
- Work ethics;

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- Human factors;
- Special working environment such as ESD, air-conditioning, lighting, temperature and humidity control;
- Authorized access;
- Foreign Object Prevention

CMC Electronics has established an Environmental, Health and Safety Program. The EHS committee maintains the policies and procedures that support this program.

7.1.5 Monitoring and Measuring Resources

A system is maintained to ensure that inspection, measuring and test equipment and test software that can affect product quality are adequate to demonstrate conformance of product to specified requirements and are valid and reliable.

Engineering test procedures and inspection work instructions identify the appropriate inspection, measuring and test equipment to be used to be consistent with the required measurement accuracy and the type of measurement to be made.

The calibration system defines the extent and frequency of calibration to ensure that all inspection, measuring and test equipment, and measurement standards used have the necessary controls and accuracy to perform the required measurements.

Equipment requiring calibration is identified and tracked through periodic recall and calibrated using documented procedures against certified equipment having a known valid relationship to National or International Standards. Safeguards are used to prevent adjustments and modifications that would invalidate the calibration settings.

Equipment is utilized in environmental conditions suitable for the calibration, inspections, measurements and tests being carried out and in a manner consistent with required measurement capability. Handling, transporting and storing of measuring equipment is done in a manner so as to prevent abuse, misuse, damage or change in dimensional or functional characteristics.

The records of calibration contain, as a minimum, a description of the equipment and a unique identification number, date on which each calibration was performed, calibration interval, results obtained and action taken when results are unsatisfactory. These records are made available to the customer's representative for review upon request. They are maintained in accordance with section 7.5.3.

7.1.6 Organizational Knowledge

Currently organizational knowledge is captured through lessons learned processes and lunch and learns. Succession planning is managed at the platform level and is planned for key management positions.

The implementation of standard works and participation to various improvement activities are other methods in which CMC is maintaining and sharing organizational knowledge.

When addressing changing needs and trends, the organization considers its current knowledge and determines how to acquire or access any necessary additional knowledge and required updates. This is achieved with skill set matrices that are under the business units' leaders using a standard template in accordance with CMC requirements.

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7.2 Competence

Anyone in CMC Electronics having an assignment associated with any of the processes of the Quality and Environmental Management System is competent through education, skill, training and experience as necessary. Requirements for education, skills, training and experience are found in the job descriptions maintained by the Human Resources department.

The needs for training of personnel are identified, and documented procedures for providing that training are established and maintained. Appropriate training is provided to all levels of personnel within CMC performing activities affecting quality. All employees are aware of the importance of their activities and how they contribute to achieving quality objectives and conformity to product. The qualifications of personnel performing specialized operations, processes, tests or inspections are evaluated and documented.

Training needs are summarized in our Learning Management System. The training plans are updated regularly. The employee's performance review is also used to identify specific individual training as well as evaluate effectiveness of actions taken to satisfy competency needs.

Formal training records are maintained in the Learning Management System by the Technical training coordinator and the Human Resources Department, including proof of certification for special processes, as applicable. Additional documented education and experience records are maintained in the employee personnel files.

It is the responsibility of the relevant management to ensure that their employees are aware of the quality objectives and of the importance of their activities in achieving these objectives.

7.3 Awareness

All employees are made aware of the quality and environmental policies and they are posted in various locations within the buildings. CMC uses various means to make employees aware of their quality objectives;

The training on continuous improvement and their participation to improvement activities (Kaizen, Productivity improvement, 5S, …) make the employees aware of their contribution to improved performance. All employees are evaluated at least yearly so they can get feedback on their personal contribution.

All employees are trained on the procedures they must follow and they understand the importance of adhering to them. That communication is enforced by management at all levels through meeting with their staff. Whenever a procedure is changed, training or communication needs are assessed and verified before it gets released.

CMC provides training to all employees who have an impact on the product quality and how to report any non-conformity. CMC also trains employees on how to report any escape or potential escape so a Product Safety Review Board can be called in order to assess the safety of the civil aviation. And finally TransDigm has established a code of ethics and provided training to all employees. There is a hot line to report any non-ethical behavior.

7.4 Communication

Data regarding the performance and effectiveness and the environmental aspects of the Quality and Environmental Management System is shared throughout CMC Electronics in the following ways:

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- Intranet and SharePoint communication
- Results of President's Letter
- Meetings with employees
- Internal Communication bulletin
- Performance data posted on the bulletin boards
- Pyx4
- Accessibility of corrective and preventive action status on the computer to all concerned
- The environmental aspects are available external to CMC Electronics only upon request

For external communication CMC uses its internet web site where its Quality Manual, all applicable certificates and a document containing information usually requested by many customers. In the event of a major change to its system, CMC would communicate with its customers in a timely manner.

7.5 Documented information

CMC has established controlled procedures wherever it helps reducing risks.

7.5.1 Documentation levels

The Quality and Environmental System is documented and structured in the following three levels of documentation:

Level 1: Quality and Environmental Manual(9100-1001)

This document defines the quality policy and the Company structure and methods for maintaining the Quality Management System.

Level 2: Quality and Environmental System Procedures (9501 or 9502-XXXX Series)

These documents describe the functional responsibilities, the procedures to be used and the methods of control for each section of ISO 9001, ISO 14001 and AS9100. The Quality and Environmental System Procedures also refer, if applicable and when practical, to departmental work instructions. They affect more than one function.

NOTE; 95**1**1 and 95**1**2-XXXX procedures are written in French

Level 3: Work Instructions (9503 or 9504- XXXX Series)

When required, work instructions (WI) are developed to define details as to how specific tasks must be performed. Third layer consists of working instruction & form applicable to only one function,

For the manufacturing area, work instructions are developed and maintained as appropriate to supplement engineering drawings and specifications and to document various manufacturing processes. They are controlled by Industrial Engineering. There are two types of work instructions:

a) Process work instructions are generic in nature and are used on a number of products. They are called Generic Work Instructions.

b) Product work instructions are associated with a particular product or part. These can be Operation Breakdown Sheets (OBS), Visual Aids or Acceptance Test Procedures (ATPs) etc. They are called Part Number Specific Work Instructions.

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Appendix A lists the actual procedures and shows the relation between the procedures, the quality and Environmental manual and the ISO 9001:2015, ISO 14001:2015 and AS9100 standards.

NOTE; 95**1**3 and 95**1**4-XXXX procedures are written in French

7.5.2 Technical documents

Configuration Management is the system established for recording and reporting of the information that is necessary for the effective management of CMC products. The basic elements of this system are:

- Configuration Identification
- Configuration Change Management
- Configuration Status Accounting
- Configuration Verification and Audit

The minimum Configuration Management requirements established herein will apply throughout the life cycle of the product for design items administered by CMC's Organizational Configuration Management (OCM) function. These minimum requirements will also apply equally to all hardware, software, firmware (CEH) and documentation procured from any sub-contractor.

When required by contract, the requirements established herein will be supplemented within the product/program CM Plan to include all additional contract requirements.

These configuration practices do not apply to Commercial Off-the-Shelf items which are administered by the Component Engineering group.

The features described above shall be contained in the Product Center tool, the BAAN ERP system Engineering BOM and revision files, the associated database of Engineering records and in the Operations Quality Control records of the "as built" configuration. All shall be in the form of electronic records, organized in a manner suitable for ease of reproduction as reports, either single, or in combination.

7.5.3 Control of Documented Information

Documents and data essential to the accomplishment of the work are generated, approved, distributed and revised in accordance with documented procedures. The same level of control is applied to those documents, standards and specifications of external origin, which are considered essential to the work. Changes to document are coordinated with customer and/or regulatory authorities when required by contract or regulatory requirements.

Instructions applicable to the control of documents and data have been developed by each functional group. The documents and data are generated by qualified personnel and are reviewed for adequacy and submitted for approval by authorized personnel prior to issue.

The generation, review and approval of changes to controlled documents or data are subject to the same level of control as for the original documents. Changes to this Quality and Environmental Manual are reviewed by Senior Management and approved by the President.

7.5.4 Control of documented information (Records)

Quality and Environmental records are maintained to demonstrate conformance to specified requirements and to provide objective evidence of the Quality and Environmental System effectiveness. The quality and Environmental records are also used to analyze trends in quality and Environmental performance and the need for preventive action.

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Department managers are responsible for identifying the pertinent quality and Environmental records in their areas, and for documenting the procedures for collecting, analyzing, indexing and the filing of quality and Environmental records. Those records also include pertinent supplier documentation.

The retention period and disposal instructions for quality and Environmental records are established depending on the type and importance of data, or as specified by contract or regulatory requirements. The procedure also covers the method for controlling records created by and/or retained by suppliers.

Quality records are maintained in a manner to prevent their alteration and protect them from damage or corruption.

The quality and Environmental records are available for review by the customer or regulatory authority as specified in the contract and/or regulatory requirements.

8 OPERATION

8.1 Operation planning and control

Operation planning addresses the following topics to ensure quality (preventing quality escapes) and on-time delivery by involving representatives from all functions:

- Specific measurable quality objectives for contract, project and product are determined;
- The compatibility of the design, manufacturing process, installation and servicing, by the application of concurrent engineering practices processes when practical;
- The outcomes of Process Failure Modes and Effects Analysis are documented in Control Plans as applicable;
- The timely identification of product characteristics and manufacturing processes and the acquisition of inspection and test equipment, fixtures, tooling and skills that may be needed to ensure product quality;
- The identification of resources to support operation and maintenance of the product and meet conformity and on time delivery requirements
- The development of OBS, visual aids, ATPs, and the identification of suitable verification (process control, statistical process control, inspection and test) at appropriate stages of manufacturing;
- The clarification of customer’s requirements and standards to be used for the acceptability of the product including the verification of key characteristics as applicable; and
- The identification and preparation of quality records.

Note: Formal quality plans are only prepared when required by customers or when processes or requirements are significantly different from those documented in the QMS.

The Program Planning process defines the necessary activities required to plan the execution of a program. The process is applicable to all programs. The planning process starts when either CMC and a Customer have completed negotiations and therefore CMC receives a Purchase Order or when CMC management have authorized an internal R&D development through the approval of a Business Plan. The planning process ends when all necessary plans and Work Authorizations (WA) are in place for execution of the program. The work performed in the planning phase is funded through the creation of an initial WA and may involve initial tasks needed to meet customer requirements such as initial documents the customer requires.

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Project team meetings, peer reviews, and formal design reviews (integrated phased processes) are conducted as defined in the Project Management Plan throughout the design, development, and qualification phases of product development in order to control, coordinate, and track the project status.

8.1.1 Operational Risk Management

Operational risk is managed through

- Selection and Monitoring of Suppliers
- Contract Review
- Qualification of new processes and equipment
- Employee training and, when required, employee certification
- ERP-based Planning and Scheduling
- Controlled release of drawings, travelers, tooling and visual aids
- Preventive Maintenance
- Calibration of measuring and monitoring equipment
- Establishment of PFMEA and Control Plans, when required by Customer

Failure Reviews are conducted monthly by product line to monitor trends and review any risks associated to those trends.

Risk associated to the Product Development are evaluated by program management and can involve risk with long lead items, obsolescence, new technology development, financial risk, schedule risks associated to the program and therefore customer deliverables.

8.1.2 Configuration Management

A configuration management process appropriate to the type of products manufactured and in accordance to customer requirements has been established and is maintained.

8.1.3 Product Safety

As part of the aerospace's industry safety and management of safety critical elements are an important aspect of the Quality Management System. Processes exist for Airworthiness as documented in the Design Approval procedures manual approved by Transport Canada and existing processes in product development (DFMEA, reliability analysis and others) which incorporate safety aspects and assess hazards and manages those associated risks. It also includes a Service Difficulty reporting system and management of non-conformities and recall system and also includes post sales services. Therefore, safety is reviewed for the entire product life cycle.

8.1.4 Prevention of Counterfeit Parts

CMC has established a process to prevent the use of counterfeit or suspect counterfeit parts in its processes. The process is compliant to AS5553. In addition, CMC has also implemented a process to manage and address component quality alerts from suppliers or others organization like GIDEP & government agency.

All active products are monitored to review obsolescence information and impact coming from internal and external sources such as: external database, manufacturers, distributors, and GIDEP.

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8.2 Requirements for products and Services

Preparation and response to emergency situations (ref ISO 14001 section 8.2)

CMC has an Emergency Plan to face potential emergency situations and potential accidents that can have an impact on the environment.

Note: Parties requiring notification of nonconforming product can include suppliers, internal organizations, customers, distributors, and regulatory authorities.

8.2.1 Customer Communication

Formal communication channels are established and maintained between the Company and the customer to ensure that customer requirements are properly addressed.

Internal communication channels are established and maintained between the Program Manager and all of the program team members to ensure that the customer requirements are known and understood at all times, and that cost, schedule, technical performance and quality objectives are being achieved.

The Contract Review and Servicing procedures address:

- Communications with the Customer
- Customer Complaints
- Customer Survey

Formal processes are in place to inform customers of any program problems, production escapes or safety issues allowing the establishment of contingency actions as agreed by customers.

8.2.2 Determination of the Requirements for Products and Services

Prior to submission of a tender, or acceptance of a contract, the customer's requirements (including special requirements) are defined and communicated to the functions responsible or affected (i.e.: Program Management, Development Engineers Operations, Supply Management, Quality Assurance, Customer Support etc.) in order to ensure that all the requirements including the environmental aspects, legal requirements and other requirements are properly documented, and can be met, before submitting a tender or accepting a contract.

CMC has established processes to analyze and repair any returns from its customers. In the event claims are raised by customers then CMC is prepared to hold discussions with customers to find the best possible approach to meet the needs.

Operational risks are identified and mitigated as mentioned in section 8.1.1.

8.2.3 Review and Changes of the Requirements for Products and Services

The scope of the work and all customer requirements and associated risks are fully understood by applicable functions of the organization and if necessary, clarified with the customer as part of the tender submission process. Any discrepancies between the contract and the related tender are completely negotiated and resolved before acceptance of a contract.

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Amendments to contracts are reviewed in the same manner as the original contract with all affected and concerned parties.

Evidence of tender and contract reviews and associated documents, correspondence and forms are maintained and controlled.

8.3 Design and Development of Products

8.3.1 General

The following sections outline the process required for performing New Product Development at CMC Electronics.

8.3.2 Design and Development Planning

All the tasks required by the project are identified and assigned to the appropriate functional unit in the Work Authorization. Product/Program Management coordinates the development of project plans with the functional units. These plans may include an Engineering Development Plan, Configuration Management Plan, Software Development Plan and/or Quality Assurance Plan depending on the size and scope of the specific project. These plans define the organization and responsibility, the resources, duration, the task sequences and all the mandatory steps required by the project. Project plans are reviewed and updated as required during the design and development process. Updates or changes to these plans may require customer approval when specified by the contract or regulatory authority or other interested parties.

Periodic project design reviews as defined in the project plans and project phase reviews as mandated by the Phase Review Process are conducted by the responsible Product/Program Manager to evaluate the progress of the project.

To meet airworthiness requirements, CMC support software development as per RTCA DO-178C. In cases when required by the customer, AS9115 rev A is met.

8.3.3 Design and Development Inputs

The design input requirements are defined either by the customer's Statement of Work, the customer's product specification, military and other governing specifications, and internal product specifications in the case of development projects, and/or the contract. The documents identify characteristics such as function, performance (including consequences of failure), reliability, physical constraints, spare capacity and safety. Requirements are defined so that their achievement can be verified to ensure customer satisfaction. The design input is reviewed for adequacy. Any conflicting, incomplete, or ambiguous requirements are escalated to the Product/Program Manager for resolution and, where necessary, discussed with the customer.

All active products are monitored by Component Engineering for coming obsolescence. That process ensures a control of expected component obsolescence on new and existing designs.

8.3.4 Design and Development Controls

8.3.4.1 Design and Development reviews

Product/Program Management ensures that formal hardware and/or software design reviews are conducted for each program. Reviews are supported by independent design review

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expertise as required to ensure adequacy of the design to satisfy the contractual, quality and productivity requirements of the end product. The design reviews identify problems and proposed necessary actions, and authorize progression to the next stage. Records of design reviews are maintained as quality records in accordance with section 7.5.2.

8.3.4.2 Design and Development Verification

Designs are verified to meet product/program (input) requirements through the design output documents preparation and approval process. The approval and release of the documents is the evidence that the design meets the requirements of the specification. As an integral part of design verification, designs are verified through analysis, alternative calculations, test, demonstration, and design similarity analysis. Records of the results of the verification are reviewed before being released and are maintained as quality records in accordance with section 7.5.2.

8.3.4.3 Design and Development Validation

Product function and performance are validated in accordance with the customer or internal SOW or product specification. These activities typically include standard and environmental condition tests, reliability and maintainability demonstrations, formal qualification testing and acceptance testing. Records of the results of validation are maintained as quality records in accordance with section 7.5.2.

Note:

- Design and/or development validation follows successful design and/or verification.
- Validation is normally performed under defined operating conditions.
- Validation is normally performed on the final product, but may be necessary in earlier stages prior to product completion.
- Multiple validations may be performed if there are different intended uses.

8.3.4.4 Documentation of Design and Development Verification and Validation

At the completion of design and development, the organization ensures that reports, calculations, test results, etc., demonstrate that the product definition meets the specification requirements for all identified operational conditions.

8.3.4.5 Design and/or Development Verification and Validation Testing

Where tests are necessary for verification and validation, these tests are planned, controlled, reviewed, and documented to ensure and prove the following:

a) Test plans or specifications identify the product being tested and the resources being used, defined test objectives and conditions, parameters to be recorded, and relevant acceptance criteria;
b) Test procedures describe the method of operation, the performance of the test, and the recording of the results;
c) The correct configuration standard of the product is submitted for the test;
d) The requirement of the test plan and the test procedures are observed;
e) The acceptance criteria are met.

8.3.4.6 Controlling Design and Development Monitoring and Measurement Devices

All monitoring and measuring devices used in Development activities requiring calibration is identified and tracked through periodic recall and calibrated using documented procedures

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against certified equipment having a known valid relationship to National or International Standards.

8.3.5 Design and Development Outputs

The design output is a product definition package that meets the design input requirements and satisfies the acceptance criteria. This definition is contained in design specifications, drawings, parts lists and test procedures, which are all reviewed and approved before release. As appropriate, the product definition data package specifies the characteristics that are essential to the safe and proper functioning of the product and identifies key characteristics or critical items, when applicable, in accordance with the design or contract requirements.

All pertinent data required to allow the product to be identified, manufactured, inspected, used and maintained are defined:

- Drawings, part lists, specifications;
- A list of those drawings, part lists and specifications necessary to define the configuration and the design feature of the product;
- Information on material, processes, type of manufacturing and assembly of the product necessary to ensure conformity of the product.

8.3.6 Control of Design and Development Changes

Design changes can result in a change to existing documentation or the generation of new documentation. Design change documentation is reviewed, approved, controlled, recorded and issued in accordance with established configuration management procedures by the same functions involved in the original issue. Controlled documents, which include drawings, test procedures, engineering change orders (ECOs), etc., are reviewed and approved prior to their initial release or revision.

Changes to controlled documents are approved by the same authorized functions/organizations that reviewed and approved the original document, unless specifically authorized otherwise by those functions/organizations, in accordance with the configuration management process (see 8.1.2).

The change control process provides for customer and/or regulatory authority approval of changes, when required by contract or regulatory requirement.

8.4 Control of Externally Provided Processes, Products and Services

8.4.1 General

The selection of sources and the type and extent of control exercised, are dependent upon the type of materiel and services, the supplier’s demonstrated ability to meet CMC’s quality and purchase order requirements, and the customer requirements.

CMC is responsible for the conformity of all products, sub-contracted processes and services purchased from suppliers, including product from sources defined by the customer.

The supplier’s quality and delivery performance are reviewed at intervals consistent with the nature of the product and the supplier’s demonstrated performance. Results of supplier performance are documented and maintained in accordance with section 7.5.2. Results shall include the Incoming Inspection results, supplier surveys, evaluation of samples, first article inspections and source inspections. The Supply Management Group maintains a supplier rating system covering all pertinent aspects of supplier performance.

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A supplier list including approval status and the scope of the approval is maintained by Supply Management Quality Assurance (SMQA), based on the supplier's performance as recorded in the supplier rating system. The SMQA group reports to the Director Quality Assurance. The process to prevent the use of counterfeit parts is compliant to AS5553.

Where required, both CMC and all suppliers shall use customer-approved special process sources.

Authority for inclusion and removal from the approved supplier's list rests uniquely with Supply Management Quality Assurance.

8.4.2 Type and Extent of Control

CMC has established and implemented the inspection or other activities necessary for ensuring that the purchased product meets the specified purchase requirements.

Verification activities may include

a) Obtaining objective evidence of the conformity of the product from the suppliers (e.g., accompanying documentation, certificate of conformity, test reports, statistical records, process control);
b) Inspection and audit at supplier's premises;
c) Review of required documentation and evaluation of test reports provided, as applicable, to confirm the results comply with requirements;
d) Validation of test reports accuracy for raw materials identified as a significant operational risk as applicable
e) Inspection of products upon receipt in accordance with section 8.6 and;
f) Delegation of verification to the supplier, or supplier certification.
g) Analysis of risks based on performance and other considerations.

Where purchased product is released for production use pending completion of all required verification activities, it shall be identified and recorded to allow recall and replacement if it is subsequently found that the product does not meet requirements.

Where CMC delegates verification activities to the supplier, the requirements for verification shall be defined and a register of delegation maintained.

Verification at Supplier's Premises

When it is established that verification of the purchased product should be conducted at the supplier's facility, the purchasing document shall specify the conditions under which the release of the product will be made.

8.4.3 Information for External Providers

The information for External Providers describes the product to be purchased, including where appropriate:

a) Requirements for approval of product, procedures, process and equipment;
b) Requirements for qualification of personnel;
c) Quality Management System requirements;
d) The identification and revision status specifications, drawings, process requirements, inspection/verification instructions and other relevant technical data;

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e) Requirements for design, test, inspection, verification (including production process verification, use of statistical techniques for product acceptance), and related instructions for acceptance by CMC and as applicable critical items including key characteristics;

f) Requirements for test specimens (e.g., production method, number, storage conditions), for design approval, inspection, investigation and auditing;

g) Requirements relative to supplier notification to CMC of nonconforming product and obtain CMC approval of supplier nonconforming material, product disposition;

h) Notify CMC of changes in product and/or process, changes of suppliers, change of manufacturing facility location, and, where required, obtain CMC approval;

i) Right of access by CMC, their customer, and regulatory authorities to the applicable areas of all facilities, at any level of the supply chain, involved in the order and to all applicable records;

j) Flow-down the supply chain the applicable requirements, including customer requirements.

k) Importance of ethical behavior.

Materials are planned to meet requirements. The plan is calculated based on materials required, materials on hand, materials on order, attrition and spares, parts substitutions, manufacturing cycles and throughput, manufacturing yields and batch sizing.

The purchase order or release document shall contain a complete and clear description of the products and services ordered, including the applicable quality clauses to meet the specified requirements.

The purchasing documents are reviewed and approved for adequacy of the specified requirements prior to their communication to the supplier.

8.5 Production and Service Provision

8.5.1 Control of Production and Service Provision

Processes for the manufacturing, inspection, verification, test, installation and servicing of products are identified, planned and carried out under controlled conditions, in order to ensure the quality of those products and services.

Documented procedures defining those processes are provided by means of drawings, specifications, workmanship standards and work instructions. Workmanship, including accept and reject criteria, is specified in written standards or by means of representative samples.

Planned inspections and tests are performed at specific points during the manufacturing cycle.

Work Instructions are used to ensure that inspection and test personnel accurately evaluate the products and processes to be carried out at the various stages of manufacturing as outlined in section 8.6.

Manufacturing travelers are used as evidence that all manufacturing and inspection/verification operations have been completed as planned, or otherwise documented and authorized.

Where key characteristics or environmental aspects have been identified by customers, appropriated process control is planned to ensure that all necessary tools are available to perform the controls.

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The manufacturing, inspection/verification, test, installation and servicing of the products are performed in a suitable working environment, with the use of suitable production, installation and servicing equipment. The precision of the equipment selected is consistent with the process capability. A schedule for preventive maintenance is maintained to provide evidence of the maintenance performed on the equipment.

Controlled conditions also include as applicable:

- The implementation of release, delivery and post-delivery activities;
- Accountability for all products during production (e.g., parts quantities, split orders, nonconforming product);
- Provision for the prevention, detection, and removal of foreign objects;
- Monitoring and control of utilities and supplies such as water, compressed air, electricity and chemical products to the extent that they affect product quality, and;

The requirements for the control of processes are as prescribed in contracts and as defined in the applicable manufacturing, inspection and test work instructions.

8.5.1.1 Control of Production Equipment, Tools and Software Programs

Production equipment, tools and software programs used to automate and control/monitor product realization processes, are validated prior to release for production and are maintained. They are also maintained and inspected periodically according to documented procedures.

Storage requirements, including preservation/condition checks, are be established for production equipment or tooling in storage.

8.5.1.2 Validation and Control of Special Processes

Special processes such as high reliability soldering are validated and approved before being performed. Qualified operators carry out these processes. Records of qualified personnel, processes and equipment are maintained. The special process for electronic assembly processes is certified to Nadcap AC-7120 checklist.

The significant operations and parameters of special processes are controlled using appropriate process specifications.

8.5.1.3 Production Process Verification

A representative item from the first production run of a new part or assembly I used to verify that the production processes, production documentation and tooling are capable of production parts and assemblies. It is repeated when changes occur like engineering changes, manufacturing process changes and tooling changes.

The First Article Inspection, compliant to AS9102, is performed in accordance with 9503-0035.

A Process Failure Mode and Effect Analysis is performed for all new process and major changes to existing processes in order to identify and mitigate risks. Where appropriate, the outcome of risk assessment is documented in control plans.

8.5.2 Identification and Traceability

CMC Electronics uses configuration management as a means by which identification and traceability are maintained.

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Identification

CMC maintains the identification of the configuration of the product in order to identify any differences between the actual configuration and the specified configuration.

The identification of inspection and test status of products is maintained throughout receiving, production, installation and servicing to ensure that only products having passed the required inspections and tests are released, used or installed.

The inspection and status of the product is identified using suitable means in order to clearly distinguish between conforming and nonconforming products.

The indication of inspection and test status is traceable to the authorized individuals responsible for the verification of the product.

Traceability

The methods of product identification and serialization are established during the design stage, or as specified in the contract or regulatory requirements. Every assembly, sub-assembly and component is identified by a unique part number, which is maintained during all stages of production, delivery and installation.

Traceability is maintained by the use of serial and/or line numbers, batch number or date codes, in order to establish the configuration status of the delivered product, and the source of the material used to build the product.

Appropriate records are retained in accordance with section 7.5.4 in order to document the traceability of the delivered products. Modifications to the product subsequent to the original delivery are documented when incorporated by CMC Electronics and the configuration records are updated accordingly.

8.5.3 Property Belonging to Customers or External Providers

Procedures are established for the control, storage, maintenance and accounting of Customer/Government furnished materials, tooling and equipment, including data used for design, production and/or inspection provided to the Company for the performance of work under a specific contract or contracts. The procedures are submitted to the Customer or Government as applicable.

Customer/Government furnished property is inspected upon receipt to determine suitability, and completeness of applicable documentation. Customer/Government furnished property not meeting the requirements is segregated and the Customer is notified of this condition.

Verification by CMC Electronics does not, however, absolve the Customer of the responsibility to provide an acceptable product.

Customer/Government furnished property used for incorporation in the Company’s products is stored and handled in accordance with existing procedures applicable to CMC’s purchased materials. The material is examined at normal inspection points and if damage has occurred after receipt, or if the material is lost, or otherwise unsuitable for use, this condition is handled as nonconforming material, and the customer is notified. Records of this notification are retained in accordance with Section 7.5.4.

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8.5.4 Preservation

CMC preserves the product during internal processing and delivery to the intended destination in order to maintain conformity to requirements. As applicable, preservation includes identification, handling, packaging, storage and protection. Preservation also applies to the constituent parts of a product.

Preservation of product includes, where applicable in accordance with product specifications and/or applicable statutory and regulations, provisions for:

a) Cleaning;

b) Prevention, detection and removal of foreign objects;

c) Special handling for sensitive products;

d) Marking and labeling including safety warnings;

e) Shelf life and stock rotation;

f) Special handling for hazardous materials.

Products, including incoming materials, materials in process, and finished goods (deliverable/returned), are handled in a manner that prevents abuse, misuse, damage or deterioration. This includes protection from Electrostatic Discharge (ESD) and physical damage, and exercising safety precautions in labeling hazardous materials in accordance with the WHMIS regulations. The condition of material and products in storage is assessed at specified intervals.

Secure storage facilities or stock rooms are provided as necessary for storage of material and products pending use or shipment, to prevent damage or deterioration. Those areas are limited to authorized personnel only. An ESD control program (compliant to ANSI 20.20) is established for storing of ESD sensitive material.

Hazardous material is stored in accordance with its specific handling requirements as outlined in WHMIS regulations. Shelf life expiration dates are recorded and monitored.

Where applicable, special preservation methods are used to protect material during storage.

Packaging methods are documented to ensure the protection of the product for delivery and transportation. These documents shall include specified packing, preservation and marking (including materials used) in accordance with contractual requirements.

Delivery methods and carriers are selected to ensure damage free shipments and on-time delivery per contract specifications.

8.5.5 Post-Delivery Activities

The Customer Service department and Quality Engineering provide the:

- Collection and analysis of in-service data;
- Action to be taken, including investigation and reporting, when problems are after delivery;
- Control and updating of technical documentation;
- Approval, control, and use of repair schemes and;
- Controls required for off-site work;
- Actions to seek customer feedback;
- Support for continued airworthiness of delivered products.

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8.5.6 Control of Changes

Production process changes are controlled, documented and approved by the industrial engineer, and when applicable by the regulatory authority or the customer.

Results of these changes are assessed to confirm that the desired effect has been achieved without adverse effect on product conformity.

Design changes can result in a change to existing documentation or the generation of new documentation. Design change documentation is reviewed, approved, controlled, recorded and issued in accordance with established configuration management procedures by the same functions involved in the original issue. Controlled documents, which include drawings, test procedures, engineering change orders (ECOs), etc., are reviewed and approved prior to their initial release or revision.

Changes to controlled documents are approved by the same authorized functions/organizations that reviewed and approved the original document, unless specifically authorized otherwise by those functions/organizations, in accordance with the configuration management process (see 8.1.2).

The change control process provides for customer and/or regulatory authority approval of changes, when required by contract or regulatory requirement.

8.6 Release of Products and Services

The extent and sequence of the required inspection and test are specified in documented procedures, work instructions and manufacturing planning documents in order to demonstrate that the specified requirements are met. The amount and nature of inspection and test are based on the importance of the product characteristic, the process control exercised and the specified requirements. All inspection and test activities are carried out by authorized persons.

When key characteristics have been identified, they shall be monitored and controlled.

Sampling inspection may be used in accordance with our Statistical techniques procedure 9501-0035 although most of the time 100% inspection is applied by default. When required by contract this plan shall be submitted to the customer for approval.

Incoming Inspection and Testing

Purchased material designated for ultimate use in deliverable products shall not be used or processed until it has been inspected or otherwise found to conform to specified requirements. The amount and nature of inspection performed are based either on contractual requirements, past experience with the product, the controls exercised at source and objective evidence of conformance provided by the supplier.

Incoming material is withheld pending completion of required inspection or receipt of objective evidence of conformance from the supplier. Non-conforming material is handled in accordance with section 8.7. When released under positive recall, it is recorded on an NCR.

In-process Inspection and Testing

Product conformance to specified requirements is verified at appropriate stages of manufacturing by conducting inspection and test of selected characteristics as defined in applicable work instructions. Products are withheld from further processing until there is objective evidence that the required inspection and test have been performed. The in-process

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inspection and test may be reduced or eliminated with the implementation of proven statistical process control techniques, in accordance with section 9.1.3 of this manual. Non-conformances during in-process inspection and test are handled in accordance with section 8.7.

Final Inspection and Testing

Final inspection and testing are performed on every deliverable product to demonstrate compliance with contractual requirements and to ensure the delivery of high-quality products. The final inspection shall also provide evidence that all inspections and tests that were required during previous stages of manufacturing were in fact performed and documented as meeting the specified requirements. Nonconforming products are handled in accordance with section 8.7.

The shipments are also verified to ensure that they include a release note duly approved by an authorized individual. The release note shall consist of a Certificate of Conformance or the applicable release form required by the customer or regulatory agency. The release of shipments on behalf of the customer shall be in conformance with applicable agreements.

The inspection Documentation is documented as per 9501-0037

8.7 Control of Nonconforming Outputs

Provisions are made for the identification and control of all nonconforming products and material including nonconforming product return by a customer, in order to prevent the inadvertent use or shipment of nonconforming products and the unnecessary costs associated with the processing of nonconforming products.

Control of Nonconforming Product procedure, document 9502-0034 defines the responsibilities, authorities and methods used for the identification, segregation, review and disposition of nonconforming products, as well as the implementation of corrective action in order to prevent recurrence of the nonconformance, and action appropriate to the effect, or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started.

Records, clearly identifying the product, the nature and extent of nonconformance, the approved disposition and corrective action taken are maintained and form part of the quality records in accordance with section 7.5.2.

Disposition of use-as-is or repair is only used after approval by an authorized representative of the organization responsible for the design.

Defect, malfunction or failure of an aeronautical product affecting the safety of civil aviation systems manufactured/serviced by CMC Electronics under Transport Canada approval No. 3-73 are handled as per W.I. 9502-0026 Defect, malfunction, or failure of product serviced by CMC Electronics Aurora FAA Approved Repair Station number FV7R 724J, shall be handled in accordance with document 9000-1002.

CMC Electronics product control system will report nonconforming product that may affect the reliability or safety in a timely manner, including any counterfeit or suspect counterfeit parts. The notification includes as necessary parts affected, customer and/or CMC part numbers, quantity, and date(s) delivered.

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9 PERFORMANCE EVALUATION

9.1 Monitoring, Measurement, Analysis, and Evaluation

9.1.1 General

CMC Electronics' product quality plans are used, when necessary, for planning and defining the necessary monitoring and measurement techniques, including statistical techniques (reference sections 8.1, quality plan, statistical techniques and determining process capability). Implementation occurs according to the defined plans, the resulting data is analyzed and improvements are pursued (reference sections 9.1.3 and 10).

At all times production travelers are established and they document all the required steps including test and inspection. The records of all inspection and test steps are maintained in a database. Process trends are analyzed, when applicable, at failure review Board meetings.

The processes are monitored in order to ensure their continuing ability to achieve the planned results. Conformity is also monitored toward the legal requirements and other requirements applicable to the company.

If the planned results are not achieved, correction and corrective action are taken.

In the event of process nonconformity, appropriate actions are taken to correct the nonconforming process, evaluate whether the process nonconformity has resulted in product nonconformity, and determine if the process nonconformity is limited to a specific case or whether it could have affected other processes or products. If product nonconformity has resulted this product is identified.

CMC's establishes the monitoring and measurement process to be applied to the realization processes necessary to achieve customer requirements such as Internal Quality Audit (see section 9.2) and Statistical Techniques (see section 9.1.3).

9.1.2 Customer Satisfaction

The success in meeting customer's requirements and in achieving a high level of customer satisfaction with the Company's products and services is evaluated on a regular basis. This is done using, but is not limited to, on-time delivery performance, warranty analysis, in-service performance monitoring, customer complaint analysis, and other appropriate means. CMC has developed and implemented plans for customer satisfaction improvement that address deficiencies identified by these evaluations, and assess the effectiveness of the results.

An efficient method of handling customer inquiries is established to provide a rapid response to CMC's customers who have an urgent need for assistance or a complaint, which would adversely affect customer satisfaction.

The customer satisfaction results are summarized for discussion at management reviews.

9.1.3 Analysis and Evaluation

CMC Electronics' Quality Management System data is recorded as indicated in the section 7.5.2 and analyzed to determine the suitability, effectiveness and opportunities for improvement of the Quality Management System. The data analysis objectives for CMC Electronics are:

- To assess customer satisfaction levels or to reveal customer dissatisfaction;

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- To determine success rates in fulfilling customer requirements;
- To gather knowledge on trends associated with product and processes;
- To maintain awareness of the performance of external providers;
- To analyze and evaluate industry data on emerging cyber threats and vulnerabilities.

The need for implementing statistical techniques is defined either at the contract review stage (when it is a contractual requirement), or at the design and manufacturing planning stage when key product/process characteristics are established. These techniques include: flow diagrams; process capability studies; design of experiments; Pareto analysis; control charts; cause and effect analysis; and histograms depending on the type of data (attribute or variable).

9.2 Internal Audit

Internal Quality and Environmental System audits are conducted to ensure that CMC's Quality System complies with specified requirements and is implemented effectively. The internal audits assess compliance with processes and related procedures, identify any non-conformances, opportunities for improvements, and initiate corrective action where required. The internal audit process is reviewed as required to ensure that it is effective and that all contractual and regulatory requirements are met.

The internal audits are conducted according to an established schedule. An audit plan is maintained to ensure that all aspects of the Quality and Environmental System are properly addressed and to define the audit criteria and scope. The frequency and scope of the audits take into consideration the significance of the process and results of previous audits. The process is documented into procedure 9502-0031.

The auditors are selected to ensure objectivity and impartiality of the audit process. This is achieved by selecting a team of auditors from cross-functional departments who have received the appropriate training in the auditing process.

The audit is conducted according to a documented Internal Audit procedure and to ensure that timely corrective actions are implemented to correct any deficiencies found. The results of the audits are recorded and submitted to the personnel having responsibility in the area audited. The audit is complete once the audit report is sent and corrective actions raised (as applicable). Audit results become part of the quality records in accordance with section 7.5.2.

The results of the internal quality audits are summarized for discussion at management reviews.

The tools and techniques used are detailed in the Internal Audit procedure.

9.3 Management Review

9.3.1 General

Senior management reviews the Quality and Environmental Management Systems on a regular basis for all sites in order to ensure its continuing suitability, adequacy and effectiveness and alignment to strategic objectives. An expected outcome of these reviews is the determination of the need for any changes to the Quality and Environmental Management Systems, including changes to the quality and environmental policy and quality and environmental objectives. Records of the management reviews are filed and maintained in accordance with Quality Records Procedure 9502-0168. Furthermore, senior management also review the Business Unit, Manufacturing and Engineering objectives and outcomes on a regular basis and reports to Transdigm on a monthly and quarterly basis.

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The on-time delivery and performance of external providers are also reviewed on a monthly basis.

9.3.2 Management Review Inputs

The Management Review input includes:

- Result of internal and external audits;
- Legal and environmental regulation monitoring;
- Customer feedback and any other interested parties;
- Processes performance and product conformity Status of preventive and corrective actions (CAR aging; meeting planned response time);
- Follow-up actions from previous Management Review;
- Strategic or operational changes that could affect the Quality and Environmental Management System;
- Improvement recommendations;
- Environmental considerations;
- On-time delivery performance. The delivery performance is reviewed at the various L-X levels;
- Performance of external providers
- PEAR indicators

9.3.3 Management Review Outputs

The Management Review Output comprises the minutes of the meeting and the resulting action items regarding:

- Improvement of the effectiveness of the Quality and Environmental Management Systems;
- Improvement of the product related to customer requirements;
- Opportunities for improvement;
- Resources needed.
- Any risks that are identified

10 IMPROVEMENT

10.1 General

CMC Electronics Inc. is committed to continuous improvement. At CMC Electronics continuous improvement is:

- A part of the quality and environmental policy
- Reflected in the quality and environmental objectives
- A part of the actions taken upon audit results
- Driven by opportunities surfacing from data analysis including data from customer satisfaction survey
- A result of corrective action when the action taken corrects a new problem
- A required output from management review

CMC Electronics uses various methodologies ad tools for continuous improvements, to monitor the implementation of improvement activities and evaluate the effectiveness of the results. CMC main focus for productivity improvement, cost reduction and reduction of customer complaints.

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10.2 Nonconformity and Corrective Action

Provisions are made for the identification and control of all nonconforming products and material including nonconforming product return by a customer, in order to prevent the inadvertent use or shipment of nonconforming products and the unnecessary costs associated with the processing of nonconforming products.

Control of Nonconforming Product procedure, document 9502-0034 defines the responsibilities, authorities and methods used for the identification, segregation, review and disposition of nonconforming products, as well as the implementation of corrective action in order to prevent recurrence of the nonconformance, and action appropriate to the effect, or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started. When determining the causes of a non-conformity, consideration is given, when applicable, to human factors.

Disposition of use-as-is or repair is only used after approval by an authorized representative of the organization responsible for the design.

When required, non-conformities are flown down to external providers and the need for corrective actions is determined based on the severity and the occurrence of the non-conformity.

A corrective action system is established for the recording and analysis of all quality related problems to identify trends and determine the causes of non-conformances. This system is also used for the tracking of the corrective and preventive actions in order to measure their effectiveness.

The need for corrective action may originate from internal or customer Quality and environmental System audits, rejection reports during manufacturing or incoming inspection, return of products for repair, customer complaints and management reviews.

Procedure 9502-0042 defines the responsibilities and implementation of the corrective action system.

The needs for corrective action are documented on a Corrective Action Request (CAR) and submitted to the process owner, for the identification of the root cause and to initiate appropriate corrective action. The CARs are entered in a central database for tracking and follow-up. The originator ensures that the corrective action is implemented in a timely manner and is effective before closing the CAR. Corrective action requests that are delinquent are discussed at the management reviews.

Procedure 9502-0345 further defines how Supplier Corrective Action Request (SCAR) are assigned to a supplier, when it is determined that the supplier is responsible for the root cause nonconformity, the specific actions when timely and/or effective corrective actions are not achieved, and determining if additional nonconforming product exists based on the causes of the nonconformities and taking further action when required.

CARs and SCARS are part of the quality records in accordance with section 7.5.2.

Records, clearly identifying the product, the nature and extent of nonconformance, the approved disposition and corrective action taken are maintained and form part of the quality records in accordance with section 7.5.2.

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10.3 Continual Improvement

CMC continually improve the suitability, adequacy, effectiveness of its Quality Management System through the various processes described in previous sections such as, but not limited to; QMR, Lean Transformation, Corrective Actions, FRB's.

Non-conformances are analyzed to determine the preventive actions needed, a review of the effectiveness is performed to avoid their occurrence. The analysis may include the review of the dispositions taken on nonconforming products, observations during internal and customer audits, trends in rejection reports and product returns, and customer complaints.

All opportunities for improvement identified during internal audits are documented as a CAR (OFI; Opportunity For Improvement).

The depth of the analysis is related to the criticality of the nonconformance, the impact on performance, reliability, customer satisfaction, safety and the risk involved. Relevant information on preventive actions taken is submitted for management review.

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APPENDIX A

ISO 9001:2008/AS9100 QUALITY SYSTEM DOCUMENTATION NUMBERING SYSTEM AND REFERENCES

Subject/Title	AS9115 Reference	Quality Manual 9100-1001	Procedures (QSP)	ISO 9001 / AS9100D	ISO 14001 2015
Quality Management System	4	4	9100-1001	4	4
Understanding the organization and its contexts (was general requirements)	4.1	4.1		4.1	4.1
Understanding the needs of interested parties	4.2	4.2		4.2	4.2
Determining the scope of the quality management system (was Quality Manual)	4.3	4.4.3		4.3	4.3
LEADERSHIP	5	5		5	5
Leadership and Commitment	5.1	5.1		5.1	5.1
Customer Focus; Contract Review and Approval	5.1.2	5.1.2	9502-0116	5.1.2	
Quality and Environmental Policy	5.2	5.2		5.2	5.2
Organizational roles, responsibilities and authorities (was Responsibility and authority and management representative)	5.3	5.3		5.3	5.3
Planning	6	6		6	6
Actions to address risks and opportunities (was QMS planning)	6.1	6.1		6.1	6.1
Quality Objectives / Environmental objectives and planning to achieve them	6.2	6.2		6.2	6.2.1
Planning changes (was QMS Planning)	6.3	6.3		6.3	
Support (was Resource Management)	7	7		7	7
Resources	7.1	7.1		7.1	7.1
Infrastructure; Manufacturing process	7.1.3	7.1.3	9501-0008	7.1.3	
Environment for the operation processes (was Work Environment)	7.1.4	7.1.4	9501-0008	7.1.4	
Monitoring and measuring resources (was Control of Monitoring and measuring equipment)	7.1.5	7.1.5	9501-0012	7.1.5	
Competence (was Human Resources, general)	7.2	7.2	9502-0008	7.2	7.2
Awareness (was Competence, Awareness, and Training)	7.3	7.3	9502-0008	7.3	7.3
Communication	7.4	7.4		7.4	7.4
Documentation requirements	7.5	7.5		7.5	7.5
General	7.5.1	7.5.1		7.5.1	7.5.1
Documented Information (was Documentation requirements)	7.5.2	7.5.2	9502-0218 /9502-0168	7.5.2 / 7.5.3	7.5.2
Operation (was Product realization)	8	8		8	8
Operational planning and Control (was Planning of Product Realization)	8.1	8.1		8.1	8.1
Operational Rick Management (was Project and Risk management and Control of production Process changes))	8.1.1	8.1.1		8.1.1	
Configuration Management	8.1.2	8.1.2		8.1.2	
Product Safety	8.1.3	8.1.3		8.1.3	
Requirements for products and services (was Customer Related Processes)		8.2	9502	8.2	
Customer Communication	8.2.1	8.2.1		8.2.1	
Requirements Related to the Product and services	8.2.2	8.2.2	9502	8.2.2	
Review of Requirements Related to the Product and services	8.2.3	8.2.3	9502	8.2.3	
Changes to requirements for products and services	8.2.4	8.2.4		8.2.4	
Design and Development of products and services	8.3	8.3		8.3	
General (was Design and Development Planning)	8.3.1	8.3.1	9501-0114	8.3.1	
Design and Development Planning	8.3.2	8.3.2	9501-0114	8.3.2	
Design and Development Inputs	8.3.3	8.3.3	9501-0014	8.3.3	

Subject/Title	AS9115 Reference	Quality Manual 9100-1001	Procedures (QSP)	ISO 9001 / AS9100D	ISO 14001 2015
Design and Development Controls (was Review , verification and validation)	8.3.4	8.3.4	9501-0014	8.3.4	
Design and Development Output	8.3.5	8.3.5	9501-0014	8.3.5	
Design and Development changes	8.3.6	8.3.6	9501-0014	8.3.6	
Control of externally provided processes, products and services (was Purchasing)	8.4	8.4		8.4	
General (was Purchasing process)	8.4.1	8.4.1	9501-0023	8.4.1	
Information for External Providers (was Purchasing information and Verification of Purchased product))	8.4.3	8.4.3	9501-0023	8.4.3	
Production and Service Provision	8.5	8.5		8.5	
Control of product and service provision (was Control Process and Validation of processes for production and service provision and servicing)	8.5.1	8.5.1	9501-0008 / 9501-0006	8.5.1	
Identification and Traceability	8.5.2	8.5.2	9208-1001	8.5.2	
Property belonging to customer or external providers (was Customer Property)	8.5.3	8.5.3	9502-0221	8.5.3	
Preservation	8.5.4	8.5.4	9501-0036	8.5.4	
Post-delivery activities		8.5.5	9501-0006	8.5.5	
Monitoring and Measurement of Product	8.6	8.6	9501-0037	8.6	
Control of Nonconforming Product	8.7	8.7	9502-0034	8.7	
Measurement, Analysis, and Improvement	9	9		9	
General (was general and Monitoring and Measurement of process)	9.1.1	9.1.1		9.1.1	
Customer Satisfaction	9.1.2	9.1.2		9.1.2	
Analysis	9.1.3	9.1.3	9501-0035	9.1.3	
Internal Audit	9.2	9.2	9502-0031	9.2	
Management Review	9.3	9.3		9.3	
General	9.3.1	9.3.1		9.3.1	
Management Review Input	9.3.2	9.3.2		9.3.2	
Management Review Output	9.3.3	9.3.3		9.3.3	
Improvement	10	10		10	
General	10.1	10.1		10.1	
Nonconformity and Corrective action (was Corrective and Preventive Action)	10.2	10.2	9502-0042 9502-0345	10.2	
Continual Improvement	10.3	10.3		10.3	