

# **DENSO INTERNATIONAL EUROPE (DIEU)**

## **Customer-Specific Requirements (CSRs) for the ISO 9001:2015 and IATF 16949:2016 Standards**

Effective: October 1<sup>st</sup>, 2018

**Index of ISO 9001 and IATF 16949 Sections****Quality Management Systems – Requirements**

- 1. Scope**
  - 1.1. Scope – DENSO INTERNATIONAL EUROPE (DIEU)**
- 2. Normative references**
  - 2.1. Normative and informative references**
- 3. Terms and definitions**
  - 3.1. Terms and definitions for the automotive industry**
- 4. Context of the organisation**
  - 4.1. Understanding the organisation and its context**
  - 4.2. Understanding the needs and expectations of interested parties**
  - 4.3. Determining the scope of the quality management system**
    - 4.3.1 Determining the scope of the quality management system – supplemental
    - 4.3.2 Customer-specific requirements
  - 4.4. Quality management system and its processes**
    - 4.4.1
      - 4.4.1.1 Conformance of products and processes
      - 4.4.1.2 Product safety (\*)
    - 4.4.2
- 5. Leadership**
  - 5.1. Leadership and commitment**
    - 5.1.1 *General*
      - 5.1.1.1 Corporate responsibility (\*)
      - 5.1.1.2 Process effectiveness and efficiency (\*)
      - 5.1.1.3 Process owners
    - 5.1.2 *Customer focus*
  - 5.2 Policy**
    - 5.2.1 *Establishing the quality policy*
    - 5.2.2 *Communicating the quality policy*
  - 5.3 Organizational roles, responsibilities and authorities**
    - 5.3.1 Organizational roles, responsibilities and authorities – supplemental (\*)
    - 5.3.2 Responsibility and authority for product requirements and corrective actions (\*)
- 6. Planning**
  - 6.1. Actions to address risks and opportunities**
    - 6.1.1
      - 6.1.1.1
      - 6.1.1.2
    - 6.1.2
      - 6.1.2.1 Risk analysis (\*)
      - 6.1.2.2 Preventive action (\*)
      - 6.1.2.3 Contingency plans (\*)
  - 6.2. Quality objectives and planning to achieve them**
    - 6.2.1 (\*)

- 6.2.2. (\*)
- 6.2.2.1. Quality objectives and planning to achieve them – supplemental (\*)
- 6.3. *Planning of changes***
- 7. *Support***
- 7.1. *Resources***
- 7.1.1 *General*
- 7.1.2 *People*
- 7.1.3 *Infrastructure*
- 7.1.3.1 Plant, facility and equipment planning
- 7.1.4 *Environment for the operation of processes*
- 7.1.4.1 Environment for the operation and processes – supplemental
- 7.1.5 Monitoring and measuring resources
- 7.1.5.1 *General*
- 7.1.5.1.1 Measurement system analysis (\*)
- 7.1.5.2 *Measurement traceability*
- 7.1.5.2.1 Calibration/verification records (\*)
- 7.1.5.3 Laboratory requirements
- 7.1.5.3.1 Internal laboratory
- 7.1.5.3.2 External laboratory
- 7.1.6 *Organizational knowledge*
- 7.2. *Competence***
- 7.2.1 Competence – supplemental
- 7.2.2 Competence – on-the-job training
- 7.2.3 Internal auditor competency (\*)
- 7.2.4 Second-party auditor competency
- 7.3. *Awareness***
- 7.3.1 Awareness – supplemental
- 7.3.2 Employee motivation and empowerment
- 7.4. *Communication***
- 7.5. *Documented information***
- 7.5.1 *General*
- 7.5.1.1 Quality management system documentation
- 7.5.2 *Creating and updating*
- 7.5.3 Control of documented information
- 7.5.3.1
- 7.5.3.2
- 7.5.3.2.1 Record retention
- 7.5.3.2.2 Engineering specifications (\*)
- 8. *Operation***
- 8.1. *Operational planning and control***
- 8.1.1 Operational planning and control – supplemental
- 8.1.2 Confidentiality
- 8.2. *Requirements for products and services***

8.2.1	<i>Customer communication</i>
8.2.1.1	Customer communication - supplemental
8.2.2	<i>Determining the requirements for products and services</i>
8.2.2.1	Determining the requirements for products and services - supplemental
8.2.3	Review of the requirements for products and services
8.2.3.1	
8.2.3.1.1	Review of the requirements for products and services – supplemental
8.2.3.1.2	Customer-designated special characteristics
8.2.3.1.3	Organization manufacturing feasibility
8.2.3.2	
8.2.4	<i>Changes to requirements for products and services</i>
<b>8.3.</b>	<b>Design and development of the products and services</b>
8.3.1	<i>General</i>
8.3.1.1	Design and development of products and services - supplemental
8.3.2	<i>Design and development planning</i>
8.3.2.1	Design and development planning - supplemental
8.3.2.2	Product design skills
8.3.2.3	Development of products with embedded software
8.3.3	<i>Design and development inputs</i>
8.3.3.1	Product design input
8.3.3.2	Manufacturing process design input
8.3.3.3	Special characteristics
8.3.4	<i>Design and development controls</i>
8.3.4.1	Monitoring
8.3.4.2	Design and development validation
8.3.4.3	Prototype programme
8.3.4.4	Product approval process (*)
8.3.5	<i>Design and development outputs</i>
8.3.5.1	Design and development outputs - supplemental
8.3.5.2	Manufacturing process design output
8.3.6	<i>Design and development changes</i>
8.3.6.1	Design and development changes - supplemental
<b>8.4.</b>	<b>Control of externally provided processes, products and services</b>
8.4.1	<i>General</i>
8.4.1.1	General - supplemental
8.4.1.2	Supplier selection process
8.4.1.3	Customer-directed sources (also known as “Directed-Buy”)
8.4.2	<i>Type and extent of control</i>
8.4.2.1	Type and extent of control - supplemental
8.4.2.2	Statutory and regulatory requirements (*)
8.4.2.3	Supplier quality management system development
8.4.2.3.1	Automotive product-related software or automotive products with embedded software (*)
8.4.2.4	Supplier monitoring (*)

- 8.4.2.4.1 Second-party audit
- 8.4.2.5 Supplier development
- 8.4.3 *Information for external providers*
- 8.4.3.1 Information for external providers - supplemental
- 8.5. Production and service provision**
- 8.5.1 *Control of production and service provision*
- 8.5.1.1 Control plan (\*)
- 8.5.1.2 Standardized work – operator instructions and visual standards (\*)
- 8.5.1.3 Verification of job set-ups (\*)
- 8.5.1.4 Verification after shutdown (\*)
- 8.5.1.5 Total productive maintenance (\*)
- 8.5.1.6 Management of production tooling and manufacturing, test, inspection tooling and equipment
- 8.5.1.7 Production scheduling
- 8.5.2 *Identification and traceability (\*)*
- 8.5.2.1 Identification and traceability – supplemental (\*)
- 8.5.3 *Property belonging to customers or external providers*
- 8.5.4 *Preservation*
- 8.5.4.1 Preservation - supplemental
- 8.5.5 *Post-delivery activities*
- 8.5.5.1 Feedback of information from service
- 8.5.5.2 Service agreement with customer
- 8.5.6 *Control of changes*
- 8.5.6.1 Control of changes – supplemental (\*)
- 8.5.6.1.1 Temporary change of process controls (\*)
- 8.6. Release of products and services**
- 8.6.1 Release of products and services - supplemental
- 8.6.2 Layout inspection and functional testing
- 8.6.3 Appearance items
- 8.6.4 Verification and acceptance of conformity of externally provided products and services (\*)
- 8.6.5 Statutory and regulatory conformity
- 8.6.6 Acceptance criteria
- 8.7. Control of nonconforming outputs**
- 8.7.1
- 8.7.1.1 Customer authorization for concession (\*)
- 8.7.1.2 Control of nonconforming product – customer-specified process (\*)
- 8.7.1.3 Control of suspect product (\*)
- 8.7.1.4 Control of reworked product (\*)
- 8.7.1.5 Control of repaired product (\*)
- 8.7.1.6 Customer notification (\*)
- 8.7.1.7 Nonconforming product disposition
- 8.7.2
- 9. Performance evaluation**
- 9.1. Monitoring, measurement, analysis and evaluation**

9.1.1	<i>General</i>
9.1.1.1	Monitoring and measurement of manufacturing process (*)
9.1.1.2	Identification of statistical tools
9.1.1.3	Application of statistical concepts
9.1.2	<i>Customer satisfaction</i>
9.1.2.1	Customer satisfaction – supplemental (*)
9.1.3	<i>Analysis and evaluation</i>
9.1.3.1	Prioritization
<b>9.2.</b>	<b>Internal audit</b>
9.2.1	
9.2.2	
9.2.2.1	Internal audit programme (*)
9.2.2.2	Quality management system audit (*)
9.2.2.3	Manufacturing process audit (*)
9.2.2.4	Product audit (*)
<b>9.3.</b>	<b>Management review</b>
9.3.1	<i>General</i>
9.3.1.1	Management review – supplemental (*)
9.3.2	<i>Management review inputs</i>
9.3.2.1	Management review inputs – supplemental (*)
9.3.3	<i>Management review outputs</i>
9.3.3.1	Management review outputs – supplemental (*)
<b>10.</b>	<b>Improvement</b>
<b>10.1.</b>	<b>General</b>
<b>10.2.</b>	<b>Nonconformity and corrective action</b>
10.2.1.	
10.2.2.	
10.2.3.	<b>Problem solving (*)</b>
10.2.4.	<b>Error-proofing (*)</b>
10.2.5.	<b>Warranty management system (*)</b>
10.2.6.	<b>Customer complaints and field test analysis (*)</b>
<b>10.3.</b>	<b>Continual improvement</b>
10.3.1.	<b>Continual improvement – supplemental</b>
<b>Annex A:</b>	<b>Control Plan (*)</b>
<b>A.1</b>	<b>Phases of the control plan (*)</b>
<b>A.2</b>	<b>Elements of the control plan (*)</b>
<b>Annex B:</b>	<b>Bibliography – supplemental automotive (*)</b>

**Quality management systems - Requirements****1. Scope**

No DIEU-Specific Requirement for this section

**1.1. Scope – DENSO INTERNATIONAL EUROPE (DIEU)**

Increasing end-user satisfaction, Car Maker (OEM) and/or Customer requirements, DENSO's global manufacturing process are demanding fully matured Products and Services for series production and a robust production process along the supply chain. In order to meet this challenge we have to work together to succeed with our Products and Services in the market and to secure our future success.

Our Suppliers – hereinafter called the Organization - and their supply chain are of high importance.

Products and Services shall be designed in a preventive way to be robust and stable to ensure that every Products and Services meet the DENSO requirement.

As Organisations you have the obligation to ensure that the DIEU-Specific requirements shall be understood and implemented along the whole supply chain supplying Products and Services to DENSO, excluding consumable items.

The English language version of this document shall be the official version for purpose of third-party registration.

Sanctioned translations of this document shall

- a) Be for reference only,
- b) Reference the English version as official language,
- c) Include DENSO CORPORATION in the copyright statement.

Any other translations are not authorized.

This document is edited and controlled by DENSO International Europe – hereinafter called DIEU - having its principal office in 1832 JL Weesp at Hogeweyselaan 165, The Netherlands.

New issues and changes are communicated to the Organization. It is the Organization responsibility to assure that only the latest revision of this document is used and all prior editions are identified as obsolete.

Note: Comments or questions concerning this document should be sent to the DENSO procuring company.

The present issue number 5.0 (publication date: September 15<sup>th</sup>, 2018) replaces the issue number 4.0 with effect from October 1<sup>st</sup>, 2018.

ISO 9001, IATF 16949 inclusive the sanctioned interpretations and this document define certain Customer-Specific requirements (CSRs) of DIEU for the Organization contracted by DENSO EMEA and LATAM Region to provide Products and Services. This present CSRs shall be applied to the following DENSO Companies:

- a) EMEA (Europe, Middle East, India & Africa) Region:
  - DENSO MANUFACTURING UK LTD. (DMUK)
  - DENSO MARSTON LTD. (DNMN)
  - DENSO MANUFACTURING CZECH s.r.o. (DMCZ)
  - DENSO OTOMOTIV PARCALARI SANAYI A.S. (DNTR)
  - DENSO THERMAL SYSTEMS S.p.A. (DNTS)
  - (Poirino, Avellino, Cassino, Business Unit ORSA)
  - DENSO MANUFACTURING ITALY S.p.A. (DMIT)
  - DENSO THERMAL SYSTEMS POLSKA Sp.zo.o. (DTPO)
  - DENSO SYSTEMAS THERMICOS ESPANA S.A. (DTSP)
  - DENSO BARCELONA S.A.U. (DNBA)
  - DENSO THERMAL SYSTEMS MAROCCO S.A.R.L. (DTMO)
  - JOAO DE DEUS & FILHOS S.A. (JDEUS)
  - DENSO THERMAL SYSTEMS PUNE PVT. LTD. (DTPU)
  - DENSO MANUFACTURING HUNGARY, LTD. (DMHU)
  - DENSO POLAND Sp. Z. o.o. (DNPO)
  - ASMO CZECH s.r.o. (ACZ)

## b) LATAM (Latin American) Region:

DENSO SISTEMAS TERMICOS do BRASIL LTDA. (DTBR)  
(Betim, Pernambuco, Business Unit Off Highway)

DENSO MANUFACTURING ARGENTINA S.A. (DNAR)

The Organization shall demonstrate compliance to the certification as defined in Table 1 by an accredited third-party Certification Body. Compliance shall be demonstrated by the third-party audit report with the supply of the latest third-party Certification Body certificate.

Note: The official list of IATF-recognized Certification Bodies can be found at the IATF website:

<http://www.iatfglobaloversight.org>

The Organization shall ensure the following with regard to the Quality Management System certificate:

- a) The submitted Certificate to DENSO is valid and not fraudulent.
- b) The scope of the Certificate is consistent with the Products and Services being submitted for the site(s) including any remote support location that may interface with the sites (e.g. Product Design, Engineering, Testing, Calibration, Logistic, Distribution, Warehousing, Sales, Customer Service, Warranty Management). For any question related to this topic, the Organization shall contact their third-party Certification Body.
- c) The Organization shall notify DENSO of any change in their IATF 16949 and ISO 9001 registration status within five (5) working days. Such changes include, but are not limited to: Initial certification\*, Recertification\*, Transfer of a certification to a new Certification Body\*, Certificate suspension, Certificate reinstatement, Certificate withdrawal, Certificate cancellation without replacement.

\* These changes require submitting proof of registration as described above.

Where the Organization is unable to demonstrate third-party compliance either by a valid certificate and/or audit result, as defined in Table 1, then an explanation and supporting timing plan of compliance shall be submitted to DENSO for agreement, as part of the Organization's own development process. At a minimum the plan shall define the projected timelines involved, processes and responsibilities to ensure compliance to the latest revision of the required certification.

The Organization supplying Products and Services to DENSO shall assure a sustainable introduction of a Zero-Defect-Strategy to ensure that the Products and Services fulfil the condition for all planned applications and markets.

The requirements of this document shall be addressed by the Organization's Quality Management system.

This document is structured to strictly align the requirement with the applicable section of the ISO 9001 standard (*italic letters*) versus the IATF 16949 standard. Several section headers are followed by the statement "No DIEU-Specific Requirement for this section" to verify there is no auditable DIEU-Specific requirement for this section.

This presence of this statement shall not be interpreted to mean that other Customer Requirements (CRs) like commercial, technical or qualitative requirements do not exist for the subject addressed in the section, or that existing Customer Requirements (CRs) like commercial, technical or qualitative requirements are superseded by this statement.

Sections marked with an Asterisk (\*) after the Headline shall be understood as Minimum Automotive Quality Management Systems Requirements (MAQMSR) in addition to the compliance to the ISO 9001 standard (Reference see IATF 16949, Section 8.4.2.3. Item c).

DENSO may, at its option, fully exempt certain Organizations from IATF 16949 registration. Identification of candidate Organizations for full exemption from IATF 16949 registrations is the responsibility of DENSO Purchasing and Quality Department. However during the term of the contractual agreement between DENSO and the Organization, DENSO shall request the Organization to comply with a Management system standard requirement as listed in Table 1. The Organization shall take all reasonable steps to comply with the DENSO request.

DENSO shall flow down industry, DENSO, Car Maker (OEM) or Customer-specific requirements to the Organization who is providing Products and Services to DENSO. These may include but not limited to:

- a) Maintaining a third-party registered Environmental Management System to the ISO 14001 standard,
- b) Maintaining a third-party registered Occupational Health and Safety Management System to the ISO 45001 standard.
- c) Maintaining a third-party registered Energy Management System to the ISO 50001 standard.

The Organization should ensure the compliance with the Management System as detailed above.



**Table 1: Third-Party Registration**

Certification requirements for the Organization vary by the Products and Services supplied as following:

PRODUCTS & SERVICES	COMMODITY CODE	CERTIFICATION REQUIREMENTS
Electric Products	1111111 - 1233199	ISO 9001 and IATF 16949
Mechanical Products	3111111 - 329	
Assembly/Functional Products	5111111 - 56399	
Directed-Buy Products	Not defined	
Products classified as “Safety”		
Remanufactured (“REMAN”) Products		
Injection Moulding Services		
Sub-Assemblies & Module Services	Acc. to Commodity Code	ISO 9001 with program in place to work according to MAQMSR
Low-volume Supplier		
Raw Material	7111111 – 7491999	
Printing Products	56111 & 56199	ISO 9001
Tools & Equipment & Devices & Dies	Not defined	
Maintenance & Rework & Sorting Services		
Logistic & Transport Services & Packaging		
IT-Services		
Laboratory Services		
		ISO 9001 and ISO 27001
		ISO 9001 and ISO/IEC 17025

## 2. Normative references

No DIEU-Specific Requirement for this section

### 2.1 Normative and informative references

Associated with standards that can be directed by the DENSO procuring company, the Organization shall demonstrate conformity to those standards including, but not limited to

- the Automotive Industry Action Group (AIAG) Manuals and CQIs (CQI-8, CQI-14, CQI-19, CQI-21, CQI-24),
- the Special Process Assessments (CQI-9, CQI-11, CQI-12, CQI-15, CQI-17, CQI-23 and CQI-27),
- the Verband der Automobilindustrie (VDA) Manuals,
- ISO 17025, ISO/IEC 27001, ISO/IEC 27002, ISO 26262 and ISO 15504 SPICE.

The Organization supplying Products and Services to DENSO shall refer to the latest revision of the manuals of external origin noted in Table 2, as applicable:

**Table 2: Website manuals**

REQUIREMENTS	Website
International Organization for Standardization	<a href="http://www.iso.org">www.iso.org</a>
Automotive Industry Action Group (AIAG)	<a href="http://www.aiag.org">www.aiag.org</a>
Verband der Automobilindustrie (VDA)	<a href="http://www.vda-qmc.de">www.vda-qmc.de</a>

## 3. Terms and definitions

No DIEU-Specific Requirement for this section

**3.1 Terms and definitions for the automotive industry**

The Organization shall consider the terms and definitions as following, but not limited to:

**Quality Failure Notice (QFN)**

Documented description and notification assigned to an Organisation for the occurrence of a defect in design, material and/or workmanship of the product.

**Global Eight Disciplines (G8D)**

Documented analytical technique required for solving an unexpected problem and it is a method that shall be used after the problem occurs. G8D method shall be suitable for situations where the problem needs to be resolved as quickly and efficiently as possible while protecting customers from unwanted consequences.

**DENSO EU 8D Report**

The 8D (Disciplines), or steps form DENSO's method of choice for standardised problem solving. The report provides a template to capture all information relating to the 8D (Disciplines) or steps from the activity process as a quality record. The 8D process seeks to define and understand a problem. It asks why a process is operating outside of a target range and provides a mechanism for identifying root causes and implementing an appropriate corrective action. 8D process can also change processes, procedures or systems, so that the problem and other problems similar to it are prevented from happening again by verifying the effectiveness of the corrective actions implemented.

**Control Shipping Level (CSL)**

A process that is to be implemented by the Organization who continually fails to effectively prevent further flow out / delivery of nonconforming product to DENSO and as such requires the 100% inspection of the affected product at the Organization's site prior to shipping release to DENSO. As well as ensuring that the Organization provides supporting evidence to demonstrate that it has successfully implemented / validated its associated corrective actions and improved its processes, as well as possessing an exit strategy to conclude.

**Notification of Quality Assurance Requirements (NQAR)**

Documented description of the planned quality assurance activities (time-based) inclusive critical control designation within a project and/or process for Products and Services assigned to the Organization.

**Critical Control Designation**

Classification of characteristics for a Product and/or Process either designated by DENSO to the Organization or designated by the Organization through the knowledge of the Product and /or Process. Excessive variation may affect the Product safety, compliance with statutory or regulatory requirements, fit, function, appearance and/or quality of subsequent operations.

**Pass Through Characteristics (PTCs)**

A classification of product characteristics which can have potential fit, form or functional issues that will not be controlled or functionally tested by DENSO and would have a significant impact on Car Maker (OEM) and/or Customer and/or end-user.

**Maturity Level Assurance (MLA)**

Maturity Level Assurance is a control method within project management initiated by DENSO and assigned to the Organization. By applying specific rules, including the introduction of round table meetings, both the Organization and DENSO are jointly involved at an early stage in the product creation phase. Additional work can be avoided where the elements of maturity level assurance are consciously integrated at an early stage in the project management. The principle objectives of the maturity level assurance method is to improve the launch quality, delivery quality and field quality of the Products and Services, by harmonising the contents and operations in the supply chain. By employing a structured procedure of defined measurement criteria relating to the milestones of the overall project plan established by DENSO, the agreed quality of the Products and Services to be supplied is ensured.

**Quality Assurance Schedule (QAS) and Tooling Progress Report (TPR)**

Documented description of activities of the Organization provided to DENSO with a schedule of quality control and manufacturing activities leading up to and including initial mass production. The QAS shall include the Organization master schedule, the Product build and ship schedule, the process development schedule, the quality development schedule, the production part approval process schedule (AIAG PPAP) or the production process and product approval schedule (VDA PPA) compliant to the DENSO requirements. The TPR shall include the Organization activities from design through mass production for all new dies, moulds, equipment, tools and devices.

**Substance of Environmental Concern (SoEC)**

Documented description of chemical substances of the Organization provided to DENSO that may have a detrimental effect on the environment.

**Consigned Products**

Products released by Car Maker (OEM) or Customer and supplied to DENSO. Car Maker (OEM) or Customer has full commercial control of the Products. Car Maker (OEM) or Customer control the inventory and retains lead quality responsibility for life of the Products.

**Directed-buy Products**

Products released by Car Maker (OEM) or Customer and supplied to DENSO by the Organization. Car Maker (OEM) or Customer has partial commercial control of the Products. DENSO issues the Products Purchase Order and controls the inventory towards the Organization. Car Maker (OEM) or Customer has lead quality responsibility for the Products during product development and launch. DENSO assumes lead quality responsibility for volume production and service use.

**Design Verification (DV)**

Design Verification is a series of tests, inspections and procedures that shall be accomplished to determine if the design meets its requirement.

**Production Validation (PV)**

Production Validation (PV) is a series of tests validating the production tooling, methods and processes used to manufacture Products.

**Remanufactured ("REMAN") Products**

Products produced by a formal process that reused core material or used assemblies from the field and restores them into usable Products. Reused core is combined with new Products, rework and repair to make a reliable assembly for resale. Remanufacturing processes shall be a subject to Process planning meetings and Process Audits.

**DENSO Group Business Fields**

Technologies from Automotive (Powertrain Control Systems, Electronic Systems, Thermal Systems, Information & Safety Systems, Small Motors) and Consumer to Industrial Products and new business fields. The DENSO homepage can serve as a reference: <https://www.denso.com/global/en/about-us/business-fields/>

**4. Context of the organisation****4.1. *Understanding the organisation and its context***

No DIEU-Specific Requirement for this section

**4.2. *Understanding the needs and expectations of interested parties***

No DIEU-Specific Requirement for this section

**4.3. *Determining the scope of the quality management system***

No DIEU-Specific Requirement for this section

**4.3.1 Determining the scope of the quality management system – supplemental**

No DIEU-Specific Requirement for this section

**4.3.2 Customer-specific requirements**

No DIEU-Specific Requirement for this section

**4.4. Quality management system and its processes****4.4.1.**

No DIEU-Specific Requirement for this section

**4.4.1.1 Conformance of products and processes**

No DIEU-Specific Requirement for this section

**4.4.1.2 Product Safety (\*)**

The Organization shall appoint an on-site Product Safety Representative (PSR) for each stage in the supply chain associated with the Supplier Contact sheet. In terms of any change the Organization shall provide an updated Supplier Contact sheet to the DENSO procuring company within five (5) working days.

**4.4.2.**

No DIEU-Specific Requirement for this section

**5. Leadership****5.1. Leadership and commitment****5.1.1. General**

No DIEU-Specific Requirement for this section

**5.1.1.1 Corporate responsibility (\*)**

No DIEU-Specific Requirement for this section

**5.1.1.2 Process effectiveness and efficiency (\*)**

No DIEU-Specific Requirement for this section

**5.1.1.3 Process owners**

No DIEU-Specific Requirement for this section

**5.1.2. Customer focus**

No DIEU-Specific Requirement for this section

**5.2. Policy****5.2.1. Establishing the quality policy**

No DIEU-Specific Requirement for this section

**5.2.2. Communicating the quality policy**

No DIEU-Specific Requirement for this section

**5.3. Organisational roles, responsibilities and authorities**

No DIEU-Specific Requirement for this section

**5.3.1. Organizational roles, responsibilities and authorities – supplemental (\*)**

The Organization shall provide the Supplier Contact sheet with all the required information to the DENSO procuring company. The Supplier Contact sheet shall be maintained from the Organization and in terms of any change the Organization shall provide an update within five (5) working days.

**5.3.2. Responsibility and authority for product requirements and corrective action (\*)**

No DIEU-Specific Requirement for this section

**6. Planning****6.1. Actions to address risks and opportunities****6.1.1.**

No DIEU-Specific Requirement for this section

**6.1.2.**

No DIEU-Specific Requirement for this section **Risk analysis (\*)**

No DIEU-Specific Requirement for this section

**6.1.2.2 Preventive action (\*)**

No DIEU-Specific Requirement for this section

**6.1.2.3 Contingency plans (\*)**

No DIEU-Specific Requirement for this section

**6.2. Quality objectives and planning to achieve them****6.2.1. (\*)**

No DIEU-Specific Requirement for this section

**6.2.2. (\*)**

No DIEU-Specific Requirement for this section

**6.2.2.1. Quality objectives and planning to achieve them – supplemental (\*)**

No DIEU-Specific Requirement for this section

**6.3. Planning of changes**

No DIEU-Specific Requirement for this section

**7. Support****7.1. Resources****7.1.1. General**

No DIEU-Specific Requirement for this section

**7.1.2. People**

No DIEU-Specific Requirement for this section

**7.1.3. Infrastructure**

No DIEU-Specific Requirement for this section

**7.1.3.1. Plant, facility and equipment planning**

The Organization shall submit the Self-Assessment, Supplier Quality Book and Feasibility Commitment associated with the offer to the DENSO procuring company.

**7.1.4. Environment for the operation of processes**

No DIEU-Specific Requirement for this section

**7.1.4.1. Environment for the operation and processes - supplemental**

The Organization shall encourage and check 5S activities (Seiri - Sort, Seiton – Set in order, Seiketsu - Standardization, Seisou - Cleanliness, Shitsuke – Sustainability/Discipline), so that 5S can be maintained consistently at workplaces. Management team shall continuously monitor improvement plans on a monthly base.

**7.1.5. Monitoring and measuring resources****7.1.5.1. General**

No DIEU-Specific Requirement for this section

**7.1.5.1.1. Measurement system analysis (\*)**

No DIEU-Specific Requirement for this section

**7.1.5.2. Measurement traceability**

No DIEU-Specific Requirement for this section

**7.1.5.2.1. Calibration/verification records (\*)**

No DIEU-Specific Requirement for this section

**7.1.5.3. Laboratory requirements****7.1.5.3.1. Internal Laboratory**

No DIEU-Specific Requirement for this section

**7.1.5.3.2. External Laboratory**

No DIEU-Specific Requirement for this section

**7.1.6. Organisational knowledge**

No DIEU-Specific Requirement for this section

**7.2. Competence**

No DIEU-Specific Requirement for this section

**7.2.1. Competence – supplemental**

The Organization shall evaluate the skills of the project teams involved in DENSO projects. The Organization shall identify the need of trainings in personnel engaged for example in special tasks such as inspection, special processes, internal system

audit, internal product audit, internal process audit, second-party audit, but not limited to. Employees have had a skill assessment, a training plan and evidence of training. The Organization shall ensure that only trained and qualified personnel are involved in all aspects of the development and manufacturing of DENSO Products.

**7.2.2. Competence – on-the-job training**

No DIEU-Specific Requirement for this section

**7.2.3. Internal auditor competency (\*)**

No DIEU-Specific Requirement for this section

**7.2.4. Second-party auditor competency**

No DIEU-Specific Requirement for this section

**7.3. Awareness**

No DIEU-Specific Requirement for this section

**7.3.1. Awareness – supplemental**

No DIEU-Specific Requirement for this section

**7.3.2. Employee motivation and empowerment**

No DIEU-Specific Requirement for this section

**7.4. Communication**

The Organization shall comply with the Forever Requirements as proactive communication requirements of all the Organization supplying Products and Services to DENSO. They are required to ensure process stability and Product quality. The Forever Requirements are listed as following, but not limited to:

- a) Request approval from DENSO prior to implementing any anticipating change in Products,
- b) Request approval from DENSO prior to implementing any internal or supplier manufacturing location change,
- c) Immediate notification of DENSO upon discovery of supplier quality issues and/or supply issues and/or warranty issues,
- d) Notification of DENSO for potential supply issues and/or capacity issues.

**7.5. Documented information****7.5.1. General**

No DIEU-Specific Requirement for this section

**7.5.1.1. Quality management system documentation**

No DIEU-Specific Requirement for this section

**7.5.2. Creating and updating**

No DIEU-Specific Requirement for this section

**7.5.3. Control of documented information****7.5.3.1.**

No DIEU-Specific Requirement for this section

**7.5.3.2.**

No DIEU-Specific Requirement for this section

**7.5.3.2.1. Record retention**

The Organization shall comply with the minimum archiving periods according to Table 3. The requirements do not supersede any regulatory requirements. DENSO reserves the right to modify specific record retention requirements.

**Table 3: Minimum archiving periods**

Safety Case (with substantiating documents for evidence that the requirements are met)	30 years <sup>1</sup>
APQP or MLA file	1 year <sup>2</sup>
PPAP or PPA file	15 years <sup>2</sup>

**Table 3: Minimum archiving periods (cont'd)**

Layout inspection and functional testing (Requalification )	3 years
Records for identifying supplies for traceability	6 years
Quality Control Records (inclusive special/critical characteristics)	15 years <sup>2</sup>
Quality requirement documents (inclusive special/critical characteristics)	15 years <sup>2</sup>
Quality Control records & Quality requirement documents (exclusive special characteristics)	3 years
Inspection and Measurement Records	2 years
Quality Failure Notice and G8D reports	10 years <sup>2</sup>
Design and Process Change Request	10 years <sup>2</sup>
Market Monitoring	10 years <sup>2</sup>
Deviation Release	6 years <sup>2</sup>
Correspondence and Meeting Records	10 years <sup>2</sup>
Audit records (Internal QM system, Product audit, Process audit, Special Process Assessment)	3 years
Training records from the date of the training	3 years
Job set-up records	1 year
Maintenance records	1 year
Measurement equipment calibration records (inclusive special/critical characteristics)	15 years <sup>2</sup>
Measurement equipment calibration records (exclusive special/critical characteristics)	3 years
Tooling records (including maintenance and ownership)	15 years <sup>2</sup>
Customer Requirements (e.g. but not limited to technical, commercial, product and manufacturing process-related requirements, General Terms and Conditions, Customer-Specific Requirements, Boundary/Master sample, Drawings, Logistic Protocol, FMEA)	10 years <sup>2</sup>
Quality records for spares & replacement product	15 years <sup>2</sup>

1: This period shall guarantee a minimum duration of fifteen (15) years after the manufacture of the last product

2: After the last supply product is manufactured (series and spare product). For commercial vehicles longer periods can apply (up to 35 years)

### 7.5.3.2.2. Engineering specifications (\*)

The Organization shall issue the Raw Material Specification sheet and shall gain the mutual agreement with the DENSO procuring company.

## 8. Operation

### 8.1. Operational planning and control

No DIEU-Specific Requirement for this section

#### 8.1.1. Operational Planning and control - supplemental

No DIEU-Specific Requirement for this section

#### 8.1.2. Confidentiality

No DIEU-Specific Requirement for this section

### 8.2. Requirements for products and services

## 8.2.1. Customer communication

No DIEU-Specific Requirements for this section

### 8.2.1.1. Customer communication – supplemental

The Organization shall agree with that DENSO's official language for communication (verbal or written) is English. Documents can be displayed in native or other languages when integrated in parallel translation, in this instance the English wording shall take precedence.

The Organization should use specific documents as listed in Table 4 and/or other documents that can be directed by the DENSO procuring company and/or DENSO Group Business Fields. By using your own documents the Organization shall ensure that the content is consistent with the DENSO documents.

**Table 4: Specific Documents**

DOCUMENT TITLE	CSR SECTION	NUMBER
NQAR / Specific Requirements	3.1; 8.2.3.1.2; 8.3.3.1; 8.3.3.2; 8.3.4.2; 9.2.2.4	01 / 17
Quality Assurance Schedule (QAS) / Tooling Progress Report (TPR)	8.3.4.1	02A / 02B
Self-Assessment	7.1.3.1	03
Sample Inspection	8.3.4.4	04
Lot Traceability Information	8.5.2.1	05
Early Stage Control Request / Early Stage Control Plan	8.3.5.2	06A / 06B
Product and Process Audit Self-Assessment	9.2.2.3	07
TEC SLA-RASIC DENSO – Supplier / OEM-Tier1-Tier2	8.3.2.1; 8.4.1.3	08A / 08B
SQB Potential Candidate / SQB Quotation Requirements	7.1.3.1	09A / 09B
Shipment Notification Sheet	8.7.1.1	10
Deviation Request & Reply Sheet	8.7.1.1	11
Feasibility Commitment	7.1.3.1; 8.3.6.1; 8.5.6.1	12
Process Change Request	8.5.6.1	13
Design Change Request	8.3.6.1	14
QFN DIEU version / QFN TEC version	3.1; 10.2.3; 10.2.6	15A / 15C
EU 8D report - DIEU version / G8D report - TEC version		15B / 15C
Sorting – Rework Confirmation	8.7.1.6	16
Supplier Contacts Sheet	4.4.1.2; 5.3.1	18
Sample Tag	8.3.4.4	19
CSL1-CSL2-NBH (DIEU versions) / CSL1-CSL2-Escalation (TEC version)	9.1.2.1, 10.2.3; 10.2.5; 10.2.6	20A / 20 B
Product & Process History	8.3.5.2	21
QIP	9.1.2.1, 10.2.3; 10.2.6	22
Raw Material Specification sheet (EU-ME-004)	7.5.3.2.2	23



The Organization shall use specific IT-Systems to exchange data with DENSO as listed in Table 5 and/or other IT-Systems that can be directed by the DENSO procuring company and/or DENSO Group Business Fields.

**Table 5: Specific IT-Systems**

IT-SYSTEM	GROUP BUSINESS FIELD	DESCRIPTION
SQx (~Feb. 2019)	Thermal Europe Centre (TEC)	B2B portal for a Global Supplier Quality Management

**8.2.2. Determining the requirements for products and services**

No DIEU-Specific Requirement for this section

**8.2.2.1. Determining the requirements for products and services - supplemental**

No DIEU-Specific Requirement for this section

**8.2.3. Review of the requirements for products and services**

**8.2.3.1.**

No DIEU-Specific Requirement for this section

**8.2.3.1.1. Review of the requirements for products and services – supplemental**

No DIEU-Specific Requirement for this section

**8.2.3.1.2. Customer-designated special characteristics**

Where such characteristics are designated by DENSO's drawings, specifications, standards and/or specified within the Notification of Quality Assurance Requirements (NQAR) then the Organization shall implement and address all requirements associated with DENSO's own special characteristics (i.e. Critical Control Designation), as listed in Table 6.

The following requirement shall apply to the Safety (S) and Regulation (R) characteristics specified in e.g. Engineering specification, NQAR, Drawing:

- a) Short-term process capability:  $Cmk \geq 2,0$
- b) Preliminary process capability:  $Ppk \geq 2,0$
- c) Long-term process capability:  $Cpk \geq 1,67$

The following requirement shall apply to all other characteristics specified in e.g. Engineering specification, NQAR, Drawing:

- a) Short-term process capability:  $Cmk \geq 1,67$
- b) Preliminary process capability:  $Ppk \geq 1,67$
- c) Long-term process capability:  $Cpk \geq 1,33$


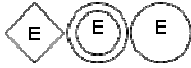

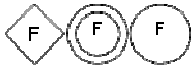




For the short-term and preliminary capability the Organization shall examine at least 125 parts from the serial process. The distribution of these 125 parts shall be collected by using a subgroup size of five parts. Other subgroup size may be more appropriate for a particular application, but the total sample size shall be at least 125.

For the long-term capability the Organization shall use the statistical evaluation of the control charts. In this context control frequency, stability and value distribution shall be examined and the process capability and process performance shall be calculated by the Organization. The Organization shall define the observation time frame necessary for this specific process, however a time frame of twenty (20) production days should normally be taken as the basis.

If a product characteristic cannot be demonstrated with process capability the Organization shall provide evidence via secondary characteristics or a correlated 100% check shall be used.

In case where no appropriate method is available the Organization shall develop other suitable method for the specific Products to demonstrate process reliability in production for example, but not limited to by random sample frequency or boundary/master sample.

**Table 6: Critical Control Designation**



DESIGNATION TYPE	APPLICABLE PRODUCTS	SYMBOL
<b>S: Safety</b>	1: Products with defects, failure or handling errors which might lead to injury / deadly accidents, vehicle fire or other serious accidents 2: Products regulated by laws regarding safety 3: Designated products by Customers <sup>2</sup>	
<b>E: Emission</b>	1: Products with defects or failure which might lead to inhibitions in exhaust gas purification function as well as in perception / judgment function for exhaust-gas-related characteristics. 2: Products regulated by laws regarding exhaust gas 3: Designated products by Customers <sup>2</sup>	
<b>R: Regulation</b>	1: Products which a responsible General Manager of Eng. Dept. decides necessary for the designation when considering prevention for lack of certification marks and for incompatibility with legal regulations against products except Designation Type S and E. 2: Designated products by Customers <sup>2</sup>	
<b>F: Fahren (Driving) Function</b>	1: Products with defects or failure which might lead to inhibitions in the driving function 2: Designated products by customers <sup>2</sup>	
<b>C: Critical</b>	1: Products whose effects of defects or failure are not defined by the above S, E, R, and F and which also need to go through Critical Control Designation 2: Designated products by customers <sup>2</sup>	
<b>In: Installation</b>	1: DENSO products are installed in mating parts such as vehicle, engine and transmission at Customer 2: Mating products/parts are installed in DENSO products at customer (such as fitting part with connector or pipe, sealing part of fuel or gas, insert hole of filter) 3: Mating equipment is installed in DENSO products at customer (fitting/connecting part with filling machine or inspection tools etc.)	
<b>QC: Critical Quote<sup>1</sup></b>	1: Initial capability study in case of release of new components/product 2: Periodical capability study as from PCP (Process Control Plan) 3: Releasing of new tools and periodical product validation	
<b>QP: Process Quote<sup>1</sup></b>	Can be considered as a sub-part of QC. They can also be released regardless any reference to any QC. They are quotes which are used at production stage: by checking those quotes DENSO can assume that even other quotes are OK and manufacturing process can be released (i.e. after a die set-up). Correlation between QC and QP must be preliminary issued by measurements (agreed by Quality Engineering, R&D and Plant)	

1: Designation Type is only in use at DENSO Group Business Field Thermal Europe Centre – Business Unit South Europe

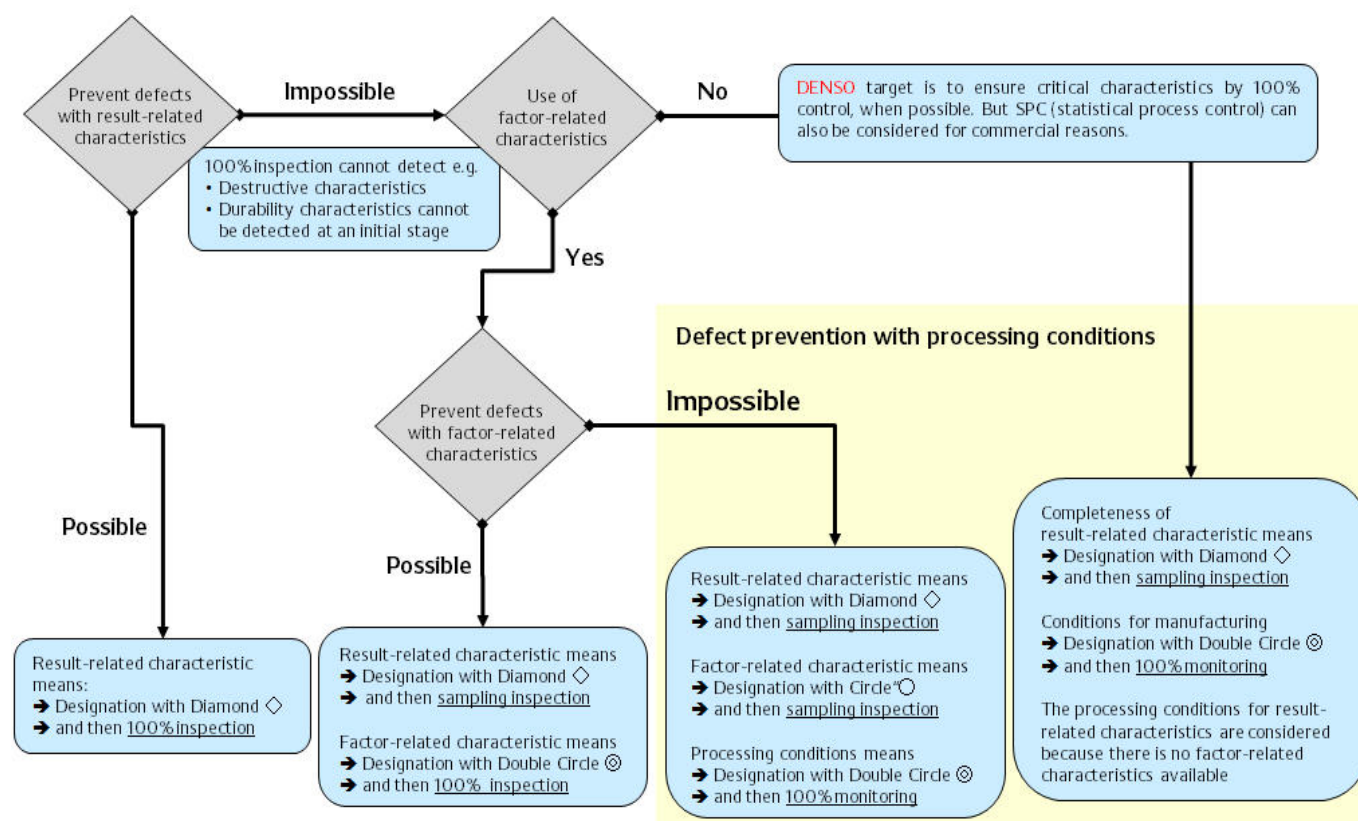
2: Drawings may also include customer related symbols that aren't mentioned in the Table above. Please contact your DENSO representative in terms of any question.

The Organization shall be aware that DENSO separates the Critical Control Characteristics in two main classes as described in Table 7.

**Table 7: Separation of Critical Control Characteristics**

SYMBOL	RESULT-RELATED		FACTOR-RELATED	
Definition	Functions and properties of the product		Functions and properties of sub-parts or processing conditions	
Example	Performance values, dimension for installation, Product interfaces, appearance, strength		Dimension for product assembly, Material characteristics, Process conditions	
Used in Drawing Type	Assembly or assembly reference drawing		Sub-assembly drawing or single part drawing	
Symbol	Diamond:		Circle or Double Circle if 100% check	
Purpose	Ensure functions and properties of the product which shall be used by the customer.		Ensure implicit by a sub-factor a result related characteristic (used, if a result-related characteristic is not checkable by 100% inspection	

The separation in result-related and factor-related characteristics shall support the Organization to install a preventive method for defect occurrences at DENSO procuring companies and/or DENSO end-customers. Picture 1 shall illustrate the decision tree inclusive an appropriate control method.

**Picture 1: Decision Tree**


The Organization shall reflect the Critical Control and Pass Through Characteristics (PTCs) in their documentation like drawings, specifications, standards, process control sheets, process control plan, work instructions and any other document as appropriate. The Organization shall become responsible for performing the testing, recording the results and submitting the date to DENSO as well making them available during on-site audits.

**8.2.3.1.3. Organization manufacturing feasibility**

No DIEU-Specific Requirement for this section

**8.2.3.2.**

No DIEU-Specific Requirement for this section

**8.2.4. Changes to requirements for products and services**

No DIEU-Specific Requirement for this section

**8.3. Design and development of the products and services****8.3.1. General**

No DIEU-Specific Requirement for this section

**8.3.1.1. Design and development of products and services - supplemental**

No DIEU-Specific Requirement for this section

**8.3.2. Design and development planning**

No DIEU-Specific Requirement for this section

**8.3.2.1. Design and development planning - supplemental**

The Organization should comply to the project management and FMEA standard informed by the DENSO procuring company and/or DENSO Group Business Fields. The Organization shall be responsible for the Products produced and for any subcontracted Services, including TIER-n specified by Car Maker (OEM) or Customer and agreed by DENSO and by the Organization with a Multi-Party or Service Level Agreement (SLA) (see also Section 8.4.1.3).

**8.3.2.2. Product design skills**

The Organization shall assign design and development work to persons with appropriate competence (including skills of tool and technique). Further Organisations shall clarify the tool and technique to be used in product design as following examples, but not limited to:

a) Tools: CAD, CAE;

b) Techniques: tolerance design, parameter design, manufacturing design, FMEA, FTA, quality function development, multi-variant analysis, experimental design method, reliability technique.

**8.3.2.3. Development of products with embedded software**

The Organization shall comply with the automotive standard requirements (e.g. ISO 26262, ISO 15504 SPICE) informed by the DENSO procuring company and/or DENSO Group Business Fields.

**8.3.3. Design and development inputs**

No DIEU-Specific Requirement for this section

**8.3.3.1. Product design input**

The Organization shall comply with the requirements of the quality plan associated with the Notification of Quality Assurance Requirements (NQAR) and informed by the DENSO procuring company. The Organization shall return the NQAR once confirmed and/or amended within a period not longer than fifteen (15) working days.

**8.3.3.2. Manufacturing process input**

The Organization shall comply with the requirements of the quality plan associated with the Notification of Quality Assurance Requirements (NQAR) and informed by the DENSO procuring company. The Organization shall return the NQAR once confirmed and/or amended within a period not longer than fifteen (15) working days.

**8.3.3.3. Special characteristics**

The Organization shall include the requirements of Section 8.2.3.1.2 and as such shall demonstrate compliance with DENSO-specified definitions and symbols or the Organizations equivalent symbols or notations, as defined in the symbol conversation table. The symbols conversion table shall be submitted to DENSO, upon request.

**8.3.4. Design and development controls**

No DIEU-Specific Requirement for this section

**8.3.4.1. Monitoring**

The Organization shall inform the DENSO procuring company on the status of the Quality Assurance Schedule and Tooling

Progress Report. Both shall be maintained and shall be reported by the Organization to DENSO, upon request.

#### **8.3.4.2. Design and development validation**

The Organization shall satisfactorily complete the Design Verification (DV) and Product Validation (PV) prior to the submission of PPAP/PPA. The Organization shall comply with the requirement associated with the Engineering specification and/or Notification of Quality Assurance Requirements (NQAR) by the DENSO procuring company.

For the injection mould design validation the Organization shall provide a mould flow analysis and a drawing agreement.

#### **8.3.4.3. Prototype programme**

No DIEU-Specific Requirement for this section

#### **8.3.4.4. Product approval process (\*)**

The Organization shall comply with the requirements for the product approval process specified either by the default level 3 according to AIAG PPAP or the default level 2 according to VDA PPA. Further this level shall be applied unless otherwise agreed with the DENSO procuring company.

For reporting of Initial Samples to the DENSO procuring company, the Organization shall use the Sample Inspection report and each Initial Sample shall be delivered with a Sample Tag.

The Organization shall deliver free of charge to the DENSO procuring company following amount of samples:

- a) Minimum five (5) Samples per Part Number and per Cavity for the PPAP/PPA evaluation.
- b) Minimum two (2) Samples for the Material analysis.

Relevant for the Organization who delivers raw material or dies to the DENSO procuring company: An approval of PPAP/PPA shall be provided by the DENSO procuring company, after DENSO completed the in-house evaluation and validation and after DENSO can confirm that the final product fulfils the specification.

#### **8.3.5. Design and development outputs**

No DIEU-Specific Requirement for this section

##### **8.3.5.1. Design and development outputs - supplemental**

No DIEU-Specific Requirement for this section

##### **8.3.5.2. Manufacturing process design output**

The Organization shall present a Process Control Plan for prototype, pre-launch and production phase to the DENSO procuring company, upon request. Further the Organization shall provide an up-to-date Product & Process History sheet for prototype, pre-launch and production phase and an up-to-date Early Stage Control plan to DENSO, upon request.

#### **8.3.6. Design and development changes**

No DIEU-Specific Requirement for this section

##### **8.3.6.1. Design and development changes – supplemental**

The Organization should submit proposals for design and development changes per calendar year either in November and/or May to the DENSO procuring company. These suggestions are for informational purposes only and shall not release the organization from the customer's requirement as follows.

The Organization shall comply with the requirement that all design and development changes, including those proposed by the Organization and including a change in raw material, shall have written approval or a waiver of such approval by the DENSO procuring company prior to the implementation of the change. Approval of the Design change shall not authorize the Organization to ship – it shall represent authorization to proceed with the coordination of the PPAP/PPA submission. Design and development changes without approval shall be classified as unauthorized change and shall result into an escalation with New Business Hold (NBH) and the Organization shall become liable in full for any and all defects in the Products. The Organization shall submit their request associated with the Design Change Request and Feasibility Commitment sheet to the Purchasing Department of the DENSO procuring company.

#### **8.4. Control of externally provided processes, products and services**

##### **8.4.1. General**

No DIEU-Specific Requirement for this section

##### **8.4.1.1. General - supplemental**

No DIEU-Specific Requirement for this section

**8.4.1.2. Supplier selection process**

No DIEU-Specific Requirement for this section

**8.4.1.3. Customer-directed sources (also known as "Directed-Buy")**

The Organization should consider that a Multi-Party or Service Level Agreement (SLA) has been signed which correctly distributes the responsibility of each party (e.g. between Car Maker (OEM) or Customer, DENSO, the Organization and/or Tier-n).

When specified by DENSO, the Organization shall purchase Products or Services from DENSO-directed sources. All requirements of Section 8.4 (except the requirements in IATF 16949, Section 8.4.1.2) shall be applicable to the Organization control of DENSO-directed sources unless specific agreements are otherwise defined by the contract between the Organization and DENSO.

NOTE: Even if the Organization utilizes DENSO-directed sources, it shall not release the Organization from their obligation to ensure the quality of Products and Services delivered to DENSO.

**8.4.2. Type and extent of control**

No DIEU-Specific Requirement for this section

**8.4.2.1. Type and extent of control - supplemental**

No DIEU-Specific Requirements for this section

**8.4.2.2. Statutory and regulatory requirements (\*)**

The Organization shall upload to the International Material Data System (IMDS), <https://public.mdssystem.com>, the data related to the compositions of its Products. The Organization shall be even responsible for the data uploaded in IMDS related to the Products of its own TIER-n. The data submitted by the Organization shall be compliant with the DENSO DESING STANDARD – DDS2004 - "Restrictions on the use of substances of environmental concern as materials and product components". The DDS2004 shall be provided by the DENSO procuring company to the Organization.

**8.4.2.3. Supplier quality management system development**

No DIEU-Specific Requirement for this section

**8.4.2.3.1. Automotive product-related software or automotive products with embedded software (\*)**

No DIEU-Specific Requirement for this section

**8.4.2.4. Supplier monitoring (\*)**

No DIEU-Specific Requirement for this section

**8.4.2.4.1. Second-party audits**

No DIEU-Specific Requirement for this section

**8.4.2.5. Supplier development**

No DIEU-Specific Requirement for this section

**8.4.3. Information for external providers**

No DIEU-Specific Requirement for this section

**8.4.3.1. Information for external providers – supplemental**

No DIEU-Specific Requirement for this section

**8.5. Production and service provision****8.5.1. Control of production and service provision**

No DIEU-Specific Requirement for this section

**8.5.1.1. Control plan (\*)**

No DIEU-Specific Requirement for this section

**8.5.1.2. Standardised work – operator instructions and visual standards (\*)**

No DIEU-Specific Requirement for this section

**8.5.1.3. Verification of job set-ups (\*)**

No DIEU-Specific Requirement for this section



**8.5.1.4. Verification after shutdown (\*)**

No DIEU-Specific Requirement for this section

**8.5.1.5. Total productive maintenance (\*)**

No DIEU-Specific Requirement for this section

**8.5.1.6. Management of production tooling and manufacturing, test, inspection tooling and equipment**

No DIEU-Specific Requirement for this section

**8.5.1.7. Production scheduling**

The Organization shall ensure that both pre-launch and mass production orders can be fulfilled as informed by the DENSO procuring company.

**8.5.2. Identification and traceability (\*)**

No DIEU-Specific Requirement for this section

**8.5.2.1. Identification and traceability – supplemental (\*)**

The Organization shall report to the DENSO procuring company the traceability of all stages of manufacture to Products supply, upon request.

**8.5.3. Property belonging to customers or external providers**

No DIEU-Specific Requirement for this section

**8.5.4. Preservation**

No DIEU-Specific Requirement for this section

**8.5.4.1. Preservation - supplemental**

The Organization shall document and implement the handling, storage, packaging and shipping of delivered Products in order to prevent damage and deterioration to delivered products while meeting DENSO requirements according to the following criteria:

- a) The Organization shall establish handling methods that prevent damage and deterioration to delivered Products;
- b) Procedures for clarification of storage places, storage methods of first-in/first-out and optimum stock control shall be established and implemented;
- c) Procedures that comply with DENSO requirements regarding packing style and/or label indication shall be established and implemented;
- d) The Organization shall protect delivered Products using proper packing or covers to prevent damage and deterioration in transit. The Organization shall also give handling instruction to carriers and maintain the Product quality till the Products are delivered to DENSO;
- e) The Organization shall assess at appropriate planned intervals the condition of Product in stock, the place/type of storage container and the storage environment;
- f) Foreign materials shall be removed from the bottom and inside of returnable containers, in order to prevent delivered Products contaminated with foreign materials and/or to prevent them brought into DENSO. The Organization shall not use damaged containers;
- g) The Organization shall ensure that obsolete Products are controlled in a manner same to nonconforming product.

**8.5.5. Post-delivery activities**

No DIEU-Specific Requirement for this section

**8.5.5.1. Feedback of information from service**

No DIEU-Specific Requirement for this section

**8.5.5.2. Service agreement with customer**

No DIEU-Specific Requirement for this section

**8.5.6. Control of changes**

No DIEU-Specific Requirement for this section

**8.5.6.1. Control of changes – supplemental (\*)**

The Organization should submit proposals for design and development changes per calendar year either in November and/or

May to the DENSO procuring company. These suggestions are for informational purposes only and shall not release the organization from the customer's requirement as follows.

The Organization shall comply with the requirement that all process changes, including those proposed by the Organization, shall have written approval or a waiver of such approval by the DENSO procuring company prior to the implementation of the change. Approval of the Process changes shall not authorize the Organization to ship – it shall represent authorization to proceed with the coordination of the PPAP/PPA submission. Process changes without approval shall be classified as unauthorized change and shall result into an escalation with New Business Hold (NBH) and the Organization shall become liable in full for any and all defects in the Products. The Organization shall submit their request associated with the Process Change Request sheet and Feasibility Commitment sheet to the Purchasing Department of the DENSO procuring company.

**8.5.6.1.1. Temporary changes or process controls (\*)**

No DIEU-Specific Requirement for this section

**8.6. Release of products and services**

No DIEU-Specific Requirement for this section

**8.6.1. Release of products and services – supplemental**

No DIEU-Specific Requirement for this section

**8.6.2. Layout inspection and functional testing**

The organization shall perform an annual full layout inspection and functional verification unless waived in writing by the Supplier Quality Engineer of the DENSO procuring company. The results of such an activity shall be made available on request for DENSO or DENSO end-customer to review as and when required.

**8.6.3. Appearance items**

The Organization shall receive an approval on any and all appearance master by the DENSO procuring company. The Organization shall attach to the Boundary or Master Sample a Sample Tag which correctly identifies the sample purpose.

**8.6.4. Verification and acceptance of conformity of externally provided products and services (\*)**

No DIEU-Specific Requirement for this section

**8.6.5. Statutory and regulatory conformity**

No DIEU-Specific Requirement for this section

**8.6.6. Acceptance criteria**

No DIEU-Specific Requirement for this section

**8.7. Control of nonconforming outputs****8.7.1.**

No DIEU-Specific Requirement for this section

**8.7.1.1. Customer authorization for concession (\*)**

The Organization shall ask DENSO for the concession on all deviations to the specification of the Products. The requirement shall be applicable to both prototype and production level Products. The Organization shall inform the DENSO procuring company associated with the Shipment Notification sheet and Deviation Request sheet on any deviation from currently approved Products which might be supplied and/or have been supplied to DENSO.

**8.7.1.2. Control of nonconforming product – customer-specified process (\*)**

No DIEU-Specific Requirement for this section

**8.7.1.3. Control of suspect product (\*)**

No DIEU-Specific Requirement for this section

**8.7.1.4. Control of reworked product (\*)**

No DIEU-Specific Requirement for this section

**8.7.1.5. Control of repaired product (\*)**

No DIEU-Specific Requirement for this section

**8.7.1.6. Customer notification (\*)**

In the event that a nonconforming product has been shipped, the Organization shall confirm on the Sorting / Rework sheet



the required information inclusive the acceptance from the Organization within a reasonable time specified by the DENSO procuring company.

**8.7.1.7. Nonconforming product disposition**

No DIEU-Specific Requirement for this section

**8.7.2.**

No DIEU-Specific Requirement for this section

**9. Performance evaluation**

**9.1. Monitoring, measurement, analysis and evaluation**

**9.1.1. General**

No DIEU-Specific Requirement for this section

**9.1.1.1. Monitoring and measurement of manufacturing processes (\*)**

No DIEU-Specific Requirement for this section

**9.1.1.2. Identification of statistical tools**

No DIEU-Specific Requirement for this section

**9.1.1.3. Application of statistical concepts**

No DIEU-Specific Requirement for this section

**9.1.2. Customer satisfaction**

No DIEU-Specific Requirement for this section

**9.1.2.1. Customer satisfaction – supplemental (\*)**

The Organization shall comply with the supplemental standards (CRs) as directed and as submitted by the DENSO procuring company and/or DENSO Business Groups.

**9.1.3. Analysis and evaluation**

No DIEU-Specific Requirement for this section

**9.1.3.1. Prioritization**

No DIEU-Specific Requirement for this section

**9.2. Internal audit**

**9.2.1.**

No DIEU-Specific Requirement for this section

**9.2.2.**

No DIEU-Specific Requirement for this section

**9.2.2.1. Internal audit programme (\*)**

No DIEU-Specific Requirement for this section

**9.2.2.2. Quality management system audit (\*)**

No DIEU-Specific Requirement for this section

**9.2.2.3. Manufacturing process audit (\*)**

DENSO reserves the right to audit the Organization periodically. The Organization shall be required to react to the audit result and shall submit the action plan to the concerns identified.

The Organization including its supply chain shall comply with the requirements for Audits as directed by the DENSO procuring company. This Audits can be as following:

a) Layered Process Audit

The Organization supplying Products to DENSO shall incorporate an internal layered process audit with the associated AIAG manual CQI-8 to assess compliance to standardized processes, to identify opportunities for continuous improvement and to provide coaching opportunities. The layered process audit is led by Management who are competent to conduct the audits. The process shall include:

1. A schedule including frequency of audits and locations of planned audits.
2. Audit layers shall be used and include different levels of employees, including top management.
3. Customer complaints or rejections shall trigger a layered audit on the process that was cause of the issue.
4. All departments within the organization.
5. All findings shall be recorded and measured for improvement.
6. Findings that cannot be corrected during the audit shall move to an action plan for monitoring to closure.
7. Records of audits shall be maintained.
8. Layered audit questions shall be reviewed periodically and changed if needed to focus on the organization's weaknesses.

b) Special Processes

The Organization shall evaluate the effectiveness of each of the applicable special processes listed below with the associated AIAG manual:

CQI-9 Special Process: Heat Treat System Assessment, 3rd Edition

CQI-11 Special Process: Plating System Assessment

CQI-12 Special Process: Coating System Assessment

CQI-15 Special Process: Welding System Assessment

CQI-17 Special Process: Soldering System Assessment

CQI-23: Special Process: Moulding System Assessment

CQI-27: Special Process: Casting System Assessment

Evaluation of implementation effectiveness shall be based on evidence that the Organization has a process in place that includes elements such as:

1. Auditors identified (Section 7.2.3 and 7.2.4);
2. Schedule for self-assessment in place (including evidence of schedule adherence);
3. Monitoring of progress;
4. Defined corrective action process;
5. Organization-controlled record keeping (Section 7.5.3.2.1);
6. Development process (Section 8.4.2.5) identified for applicable supply chain to the Organization.

Pursuant to IATF 16949 Section 8.4.3.1, this requirement shall also apply to the supply chain of the Organization who employs the above-listed special processes.

The Organization shall evaluate their manufacturing processes, and the manufacturing processes of their supply chain, to establish and document the scope of applicability of this requirement. This document is an organisation-controlled record (Section 7.5.3.2.1). Evaluation shall be by self-assessment. The self-assessment shall be conducted annually, but may be repeated as needed. The self-assessment may be conducted as part of the organization's internal quality audit or conducted separately.

Assessment by a competent second party auditor (Section 7.2.4) will satisfy the self-assessment requirement for the supply chain of the Organization.

c) Mass Production readiness audit (self-assessment)

The Organization supplying Products to DENSO shall incorporate a Mass Production readiness audit for the product and process associated with the Product and Process Audit self-assessment sheet.

d) Process Audit

The Organization supplying Products to DENSO shall incorporate a process audit with the associated VDA manual 6.3 for Product Development Process / Serial Production.

Evaluation of implementation effectiveness shall be based on evidence that the Organization has a process in place that includes elements such as:

1. Auditors identified (Section 7.2.3 and 7.2.4);
2. Schedule for self-assessment in place (including evidence of schedule adherence);

3. Monitoring of progress;
4. Defined corrective action process;
5. Organization-controlled record keeping (Section 7.5.3.2.1);

**9.2.2.4. Product Audit (\*)**

The Organization shall comply with the Product Audit standards directed by the DENSO procuring company associated with the Notification of Quality Assurance Requirements (NQAR).

**9.3. Management review****9.3.1. General**

No DIEU-Specific Requirement for this section

**9.3.1.1. Management review – supplemental (\*)**

No DIEU-Specific Requirement for this section

**9.3.2. Management review inputs**

No DIEU-Specific Requirement for this section

**9.3.2.1. Management review inputs – supplemental (\*)**

No DIEU-Specific Requirement for this section

**9.3.3. Management review outputs**

No DIEU-Specific Requirement for this section

**9.3.3.1. Management review outputs – supplemental (\*)**

No DIEU-Specific Requirement for this section

**10. Improvement****10.1. General**

No DIEU-Specific Requirement for this section

**10.2. Nonconformity and corrective action****10.2.1.**

No DIEU-Specific Requirement for this section

**10.2.2.**

No DIEU-Specific Requirement for this section

**10.2.3. Problem solving (\*)**

The Organization shall comply with the Quality Failure Notice (QFN) and the EU8D / G8D report directed by the DENSO procuring company.

**10.2.4. Error-proofing (\*)**

No DIEU-Specific Requirement for this section

**10.2.5. Warranty management systems (\*)**

The Organization shall comply with the standard directed by the DENSO procuring company. The standards can be either CQI-14 Automotive Warranty Management Guideline and CQI-20 Effective Problem Solving Practitioner Guide or VDA Audit standard field failure analysis and VDA Field failure analysis.

**10.2.6. Customer complaints and field failure test analysis (\*)**

The Organization shall comply with the Quality Failure Notice (QFN) and the EU8D / G8D report directed by the DENSO procuring company.

**10.3. Continual improvement**

No DIEU-Specific Requirement for this section

**10.3.1. Continual improvement - supplemental****Annex A: Control Plan (\*)**

**A.1 Phases of the control plan (\*)**

No DIEU-Specific Requirement for this section

**A.2 Elements of the control plan (\*)**

No DIEU-Specific Requirements for this section

**Annex B: Bibliography – supplemental automotive (\*)**

No DIEU-Specific Requirement for this section