QUALITY REQUIREMENTS FOR SUPPLIES TO OTO MELARA S.p.A.

THIS DOCUMENT CONTAINS ALL THE QUALITY REQUIREMENTS APPLICABLE TO OUTSOURCED SUPPLIES

NOTICE.
- A printed copy of this document may not be in the revision currently in effect; the current version is always in Quality section of OTO MELARA web site www.otomelara.it or for OTO MELARA employees in intranet site.
- The user of this document, Supplier or OTO MELARA employee who considers that some aspects require clarification can send his comments to: www.otomelara.it Quality/FAQ/contacts.
- Apart for what relates to general aspects the document can be consulted by focusing on the specific supply commodity class.

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FOR CONFORMITY TO ORIGINAL

Dr. S. Lucchinelli

Date 2012-12-10

OTO MELARA S.p.A.
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REVISION INDEX

Rev.	Date	Modifications made	Department
01	**June 2005**	Translation into English of RQA0001 rev. 01 issued in June 2005	QA
01	**Edition July 2006**	Introduction of Company new logo; no alteration to the content of the document	QA
02	**October 2007**	Introduced par. 1,1 (guide to the consultation of document RQA0001). Modified: Business Logo; Cap. 3 (Reference standards); Cap. 7-Table 8 (specification of the typology of the documentation of control according to UNI EN 10204; adding class F); par. 5.1.1 (criticality level); par. 5.3.1 (non-metallic indefinite materials); Cap. 12 (additions prescription on the relative norms to requirement of quality for the welding and modified the standard of reference from UNI EN 729 to UNI EN ISO 3834).	QA
03	**February 2010**	Added cover note related to document file availability on company web site and to collection of comments and request for clarifications; Added note at paragraph 2 (Applicability) for what relates to OM facilities production processes. Updated Paragraph 3 (Reference standards…); Updated Paragraph 4 (interface matrix OTO MELARA and Supplier); Added Paragraph 3.1 (Suppliers classification…); Paragraph 7 of previous rev. has become par. 6; Added paragraph 5.2 (identification of critical characteristics on drawings); Updated: Table 7 (correspondence between the supply criticality level and the Supplier Quality management Quality Level); tables 8÷17 associating Quality Management System (ISO 9001/AQAP) for each commodity class; Added commodity class "V" (mechanical catalogue parts) and "W" (Military catalogue products developed by Suppliers)"; Updated: par. 7.1.2 (traceability); par. 7.3 (Special processes…), 7.6 (FAI), 7.7.3 (Government Surveillance), 8.6 (Manufacturing and Control Plan), 8.7 (documentation relevant to components with criticality level 1), 8.9 (Safety data sheets), 8.10 (Certificate of Conformity), par. 10 (equipment/fixtures designed by Suppliers), cap. 13 (general requirements for welded joints…), cap. 14 (Ammunition); Updated in the whole document ISO 9001:2000 to ISO 9001:2008.	QA
04	**August 2012**	Review in accordance with the requirements of EN/AS/SJAC 9100:2009: modified chap. 3 (reference standards), chap. 4 (interfaces ...), chap. 5 (identification of requirements of OTO Melara and correlation with supplier's quality system), chap. 6 (synoptic tables ...), chap. 7 (definitions and general requirements), chap. 8 (management of contract documentation....), chap. 9 (packaging and ...), chap. 10 (equipment designed by the supplier), chap. 11 (provisions to adopt for developing the design ....), chap. 12 (software), chap. 13 (General requirements for welded joints ...), chap. 14 (ammunition), chap. 15 (manuals ...), chap. 16 (activities developed by suppliers at OTO MELARA), chap. 17 (activities developed by suppliers at the sites...).	Quality

Note: The description of the introduced changes is brought in the present page while the signaling of the modified points happens through a segment vertical placed on the edge of the interested page.

TRACEABILITY DATA

Revision	File	File Identification
04	QA/039	Company network/proc_uff/RQA0001-04_E (MSW 2010)

CONTENTS

TABLES

FIGURES

1 DOCUMENT SCOPE AND OTO MELARA PROCUREMENT POLICY

This document covers minimum general Quality Assurance requirements for supplies to OTO MELARA S.p.A. (referred to hereinafter as OTO MELARA).

It is OTO MELARA policy to supply superior quality products and services that meet the Customers' requirements and come up to their expectations. OTO MELARA believes that Suppliers are key elements in its processes with whom to share responsibility for Customer satisfaction.

This document summarises all the Quality Requirements applicable to supplies to OTO MELARA.

This document is an operative tool for use in the procurement process for company departments, to help them issue purchase orders and check the results, and for the Supplier, who will find in it the information needed to develop the supply correctly.
In particular OTO MELARA incoming inspection will make reference to tables reported at paragraph 6 to evaluate supplies conformity.

Concerning the Design, the document provides guidance on the technical documentation required in order to facilitate the compilation and subsequent evaluation review.

If OTO MELARA or the Design Authority of the product licensed to OTO MELARA has produced specific documents covering the supply, they will take priority over the general requirements contained herein.

Any departure from these requirements will constitute a non-conformity, unless specifically approved following formal Request for Deviation or Waiver.

This document is consigned in a complete form to the Supplier, which must look up in it the requirements referring to the supply commissioned, in accordance with the elements in the technical documentation and in the order. It should be noted that the implementation of these requirements is implicit in the acceptance of the order.

The Supplier must also be sure to have this document is the latest revision. Updated revision can be downloaded from: http://www.otomelara.it/

If the Supplier uses Sub-Suppliers accepted by OTO MELARA, it must inform them of these requirements and include them in its purchase orders. The requirements contained herein shall apply to each Sub-Supplier according to the type of goods or services supplied.

1.1 GUIDE TO RQA0001 CONSULTATION

To ease the consultation of the document the essential paragraphs for a correct interpretation are reported in the following:

- **Paragraph 2.1:** correlation table between type of supply and requirements contained in the document RQA0001;
- **Paragraph 4.1:** interface matrix OTO MELARA and Supplier;
- **Paragraph 5.1 and Table 5:** classification of the Criticality Level;
- **Paragraph 5.1.2 and Table 6:** commodity classification in terms of quality requirements and interpretation of the drawing legend;
- **Paragraph 5.2:** Supply Quality System level associated with the criticality level;
- **Paragraph 5.3 and Table 7:** Supplier Quality management System level related to items criticality level;

- **Chapter 6 and relevant tables:** detailed instructions pertaining to activities ad operative documentation to be related to the supply and its safety criticality level;
- **Chapter 18:** explicative attachments.

2 APPLICABILITY

This document applies to all supplies to OTO MELARA and in particular to:

- all OTO MELARA designed products or coded as such;
- products designed and developed against OTO MELARA requirements;
- catalogue products;
- services and technical consulting.

For products licensed to OTO MELARA its applicability, when cited in the order, is limited to general aspects. Specific requirements will be integrated in the order itself.

This document should be considered an integral part of each OTO MELARA Purchase Order/Contract when referred to therein. When the Supplier accepts the Order/Contract, it:

- accepts the requirements and the contract terms and conditions
- guarantees to OTO MELARA to have a company organization and manufacturing facilities suitable to meet the expressed requirements of Quality Assurance and Control
- agrees to develop the activities and to supply the required documentation in accordance with the set requirements;
- undertakes to give prior notice of any change of the manufacturing facilities site;
- undertakes to transfer to the supply chain the applicable requirements expressed in the technical and supply documents of OTO MELARA.

This document integrates the Quality System of the Supplier, which is responsible for implementing all the methods defined in its own quality standard, the requirements of OTO MELARA's drawings, technical specification and documents, and applicable rules defining the performance, quality and technical features of the supply.
The contents of this document do not affect OTO MELARA's rights and faculties in accordance with the provisions of the general purchase conditions regulating relations with Suppliers.
If the Supplier wishes to subcontract part of OTO MELARA's Order/Contract, it is necessary first to obtain OTO MELARA's Procurement consent and formal authorisation.
When the Supplier has received due authorisation, it must:

- inform the Sub-Supplier of the contents of this document
- obtain from the Sub-Supplier the types of documents that apply to the supply as and when established below, and send them to OTO MELARA
- obtain access to the Sub-Supplier's offices, production units and documentation for OTO MELARA and its Customer for the purposes of performing audits and attending tests and inspections;
- give prior notice to OTO MELARA about any possible change of subsuppliers.

In all case, OTO MELARA will consider the Supplier as the assignee of the order/contract and the only one responsible for compliance to the contents of this document.
In case the supply is within a program managed by a consortium or a temporary group of firms, the applicable quality requirements standards will be treated in dedicated Quality plans agreed between the parties. These plans will constitute the main quality reference and will be complemented by this document.

NOTE
This document constitutes a guidance for Company functions to individuate all quality evidences required also for processes carried out in OTO MELARA's facilities apart those aspects intuitively relevant to Suppliers relationship only.

2.1 CORRELATION TABLE BETWEEN TYPE OF SUPPLY AND REQUIREMENTS CONTAINED IN THIS DOCUMENT

The table below constitutes a matrix between the types of supply, the class of goods code (commodity class) and the applicable sections in this document in order to provide a general picture purely as a reference, even if not exhaustive.
The table allows the Supplier to find the prescriptions related to the intended supply and OTO MELARA to find the control elements to be applied.
Paragraphs 1 to 9 are generally common to all types of supply, paragraph 6 contains the detailed requirements for various coded class of goods divided in criticality classes as per paragraph 5.1.1.
In paragraphs 10÷17 specific subjects for some kind of supplies are developed.
For other type of product not mentioned paragraphs 1, 2, 3, 4, 5, 7, 8, 9 apply.

TYPE OF PRODUCT OR SUPPLY	Code	Sec. 1, 2, 3, 4, 5, 6, 7, 8, 9	Sec. 10	Sec. 11	Sec. 12	Sec. 13	Sec. 14	Sec. 15	Sec. 16	Sec. 17
Non-metallic indefinite materials	A	x								
Functionally important non-metallic materials	B	x								
Welded structures and mechanical components	C	x				x				
Plant/systems	D	x	x	x	x	x		x		
Processing using subcontracted materials	E	x	x	x	x	x	x		x	x
Metallic indefinite materials and unfinished products	F	x								
Castings	G	x								
Forged and moulded parts	H	x								
Electrical control panels, consoles	I	x	x	x	x	x		x		
Nuts, bolts and screws	L	x								
Welding material	M	x				x				
Complete assemblies	N	x	x	x	x	x		x		
Electrical and electronic components	O	x				x				
Optical and electro-optical components and assemblies	P	x	x	x	x	x		x		
Software	Q	x	x	x	x		x	x		
Ammunition	R	x		x	x	x	x			
Hydraulic components	S	x								
Activities performed by Suppliers at the OTO MELARA plant (internal)	T	x							x	
Services rendered by Suppliers at the Customer's facility (external)	U	x								x
Catalogue commercial parts - mechanical	V	x								
Supplier developed military products available in a catalogue	W	x						x		
Equipment	Y	x	x	x	x	x	x	x		

3 REFERENCE STANDARDS FOR SUPPLIERS' QUALITY MANAGEMENT SYSTEMS

Reference Standards are those ones that apply in the context in which OTO MELARA operates and they must cover fields of application that are consistent with the types of supplies proposed by the Supplier.

ISO 9001:2008	Quality Management Systems – Requirements.
ISO 9000:2005	Quality Management Systems – Fundamentals and Vocabulary
AQAP-2110 Ed. 3	NATO Quality Assurance Requirements for Design, Development and Production.
AQAP-2210 Ed. 1 (Ex AQAP-150)	NATO supplementary Software Quality Assurance Requirements to AQAP-2110.
AQAP-2120 Ed. 3	NATO Quality Assurance Requirements for Production.
AQAP-2130 Ed. 3	NATO Quality Assurance Requirements for Inspections and Tests.
AQAP-2131 Ed. 2	NATO Quality Assurance Requirements for Final Inspection
AQAP-2070 Ediz. 2	NATO Mutual Government Quality Assurance (GQA) process.
AER-Q-2110	Requirements for Quality Assurance by D.G.A.A. concerning design, development and production.
AQAP-2009 Ediz. 2	NATO Guidance on the use of the AQAP 2000 series.
EN/AS/SJAC 9100:2009	Quality Management Systems-Requirements for Aviation, Space and Defense Organizations.
NDA0002	Code of Ethics (of OTO MELARA S.p.A.)

This document refers, by references with a revision index, or not, (or by issue date) to provisions from other publications. As for the references with a revision index (or issue date), subsequent amendments or revisions to these publications apply only if specifically introduced in this procedure as update or revision. For publications without a revision index (or without issue date), the latest available revision of the same applies.

Note 1: NATO standards can be looked up on the following website: http://www.nato.int/docu/standard.htm. Their structure follow that of ISO 9001:2008, which is subdivided into 3 separate standards (AQAP-2110, 2120, 2130) and an additional one (AQAP-2131) limited to firms performing simple activities that can be verified by means of final inspections. There is a dedicated standard for software (AQAP-2210).
Note 2: The status of UNI/EN/ISO standards can be obtained online from:
http://www.uni.com
http://www.iso.ch
Note 3: MIL standards can be obtained online from:
http://assist.daps.dla.mil/quicksearch/
http://www.fas.org/man/dod-101/sys/index.html

3.1 SUPPLIERS CLASSIFICATION IN SUPPLIERS LIST

Suppliers to get an order shall be registered in OTO MELARA Suppliers List and classified according to their characteristics and capabilities.
It is fundamental that OTO MELARA's questionnaires are properly filled and returned to have all information necessary for proper recording in the Suppliers List and to issue a Purchase Order.
To make it possible to issue a purchase order, it is necessary that the Supplier status is recorded as "active" in the List. This means that the Supplier is eligible to provide products or services to OTO MELARA.
"Active" suppliers are classified in the OTO MELARA Supplier List in two main categories:

a) approved suppliers, including:
   - authorized
     Producer or Dealer of catalogue products, standard parts, consumables that may influence the quality of the product (oil, grease, paint, tools, etc.), technical and maintenance services related to the production line.
   - qualified
     Suppliers whose supplies are related to products, processes or services intended to be integral part of OTO MELARA's products or be used for their logistic support):
     - ✓ qualified for products classifieds as criticality level 3 (see Table 5)
     - ✓ qualified for products classifieds as criticality level 2 (see Table 5)
     - ✓ qualified for products classifieds as criticality level 1 (see Table 5);

a) approved suppliers under a condition:
   In general this type includes suppliers for which conditional approval is required, which is performed by setting appropriate "points of attention", such as the binding presence of OTO MELARA personnel to particular processing phases, testing by OTO MELARA, supply of documentation according to certain standards, etc.

Depending on the severity of the situations that arise in the course of the audits and tests, the Suppliers can be "removed"/"suspended" from the List, for qualitative and/or performance problems.

- Suppliers that are considered suitable to provide products or services to OTO MELARA, but do not have orders in progress and to which it is not planned to issue orders in a short term are considered "potential".

Suppliers are also classified according to commodity class/classes they are able to supply.
Suppliers are subject to a Rating according to specific algorithms; detailed information related to the Vendor Rating are available in Quality, Suppliers Profile of internet site: http://www.otomelara.it/
Suppliers Quality management System is subject to OTO MELARA surveillance and approval. Inspections and audits including sub Suppliers can be carried out before, during of after a purchase order is given.

The supplier will be informed of the deficiencies that may have been found during these inspections or audits, to which they are required to provide a prompt solution. The corrective actions must be submitted to examination and approval by OTO MELARA Quality Department.
(see also paragraph SUPPLIER QUALITY SYSTEM LEVEL)

4 OTO MELARA INTERFACES

All the documents required for the supply issued by OTO MELARA and to be provided by the Supplier are shown in the tables in subsection 4.1, which also show the departments issuing and receiving them.
Below are details of the Procurement Departments of the two production sites:

OTO MELARA S.p.A.
OTO Unit
Procurement Department
Via Valdilocchi, 15
19136 La Spezia
ITALY
Tel. +39 0187 582209

OTO MELARA S.p.A.
BMB Unit
Procurement Department
Via Lunga 2
25126 Brescia
ITALY
Tel. +39 030 3791212

The various types of documents must be physically identified and separated so that there is no doubt as to which department they must be forwarded.

Delays in the internal distribution of documents attributable to the Supplier due to wrong type identification may generate non-conformity reports preventing payment of the invoices and penalising the Supplier's rating.

The Supplier must also refrain from consigning the supply when it is not accompanied by the necessary documentation because:

a. the product will be declared nonconforming
b. its ranking will be lowered due to the non-conformity attributable to it.

The dates of consignment of documents refer to the letter of intent, the contract and/or the purchase order.

Applications for deviation or waiver from the requirements set out in this document, which must always be approved by OTO MELARA Quality Department, should be addressed to the Procurement Department.

4.1 INTERFACE MATRIX OTO MELARA AND SUPPLIER

TABLE 1 DOCUMENTATION ISSUED BY OTO MELARA

OTO MELARA documents	OTO MELARA departments involved in document despatch				
	Procurement	**Materials management**	**Quality/Materials Incoming Inspection / STQ[1]/ QPM[2]**	**Quality Assurance/QS**	**Administration, Finance and Control**
1. Purchase document	For Action ISSUING	For Info	For Info		For Info
2. Technical documentation specified on the order and not attached to it.	For info	For competence			
3. Test procedures specified on the order and not attached to it.	For info	For info	Through		
4. reference configuration (production phase)	For info	For competence	For info		
5. Changes to orders (purchase documents)	For action ISSUING	For info	For info		For info
6. Non-conformity reports	Through[3]	For info	For action ISSUING	Monitoring by Vendor Rating	For info when debit note is envisaged
7. Report of tests c/o the Supplier	For info	For info	For action ISSUING	For info. Monitoring by Vendor rating	For info for negative results (in case of debit note)
8. Debit notes	For action FORMALIZATION	For info	For info		For action ISSUING
9. Audit reports	For info	For info	For info	For action. Monitoring by Vendor rating	
10. Shipment documents (for example: sub contracted material …)		For action, through General Warehouse			For info

[1] STQ: Technical Services of Quality (only at La Spezia plant)
2 QPM: Quality Program Manager
[3] Issues and signs the cover letter

TABLE 2 DOCUMENTS ISSUED BY THE SUPPLIER

Documents issued by the Supplier	OTO MELARA departments involved in document despatch			
	Procurement	**Materials Management**	**Quality/Material Incoming Inspection/ STQ[4]/QPM[5]**	**Quality Assurance / QS**
1. Technical/Quality Questionnaire (to be updated every two years or after each significant change to the organisation)	For action (to be handled together with Quality Assurance)			For examination and Supplier List update
2. Balance of last two years for Suppliers with supply value (towards OTO MELARA) exceeding 200K €	For competence			
3. Quality Manual (to be constantly updated)	For info through Supplier List		For info through Supplier List	For action and Supplier List update
4. Request for authorization for Sub Suppliers (with attached list of main sub-Suppliers (to be delivered during the negotiation)	For competence		For info	
5. Order confirmation (original)	For competence			
6. Quality Plan, Configuration Management Plan (**within 60 calendar days** of receipt of the order)			For verification and approval (**within 15 working days** of receipt)	
7. Manufacture / Control plan (to be delivered together with Quality Plan)		through for obtaining approval of technological content	For verification and approval for those parts of competence prior to commencement of activities	
8. Special and critical processes specifications employed as an alternative to those envisaged in OTO MELARA technical documentation to be delivered within **30 calendar days** from the order receipt		For info	For verification and approval prior to commencement of activities	
9. Welding Process Specs (WPS) and mechanical/ electrical joints process specs to be delivered before the commencement of activities			For verification and approval prior to commencement of activities	
10. Certification of special process and personnel employed in, including NDC	For info through Supplier list		For verification and approval prior to commencement of activities	For info for Supplier List update
11. Acceptance test procedure to be delivered before the commencement of activities			For verification and approval prior to commencement of activities	
12. Request for deviation / waiver from/of set requirements. To be presented when necessary, surely before presentation to final acceptance	For info	For info	For action jointly with Design department.	

[4] STQ: Technical Services of Quality (only at La Spezia plant)
5 QPM: Quality Program Manager

TABLE 3 DOCUMENTS ISSUED BY THE SUPPLIER THAT IMPACTS ON DESIGN DEPT. (CONTINUES FROM TABLE 2)

Documents issued by the Supplier	OTO MELARA departments involved in document despatch				
	Procurement	**Materials Management**	**Quality/ Materials Incoming Inspection/ STQ[6]/ QPM[7]**	**Quality Assurance / QS**	**Design dept.**
13. Request for modification to the OTO MELARA drawings/lists used (modifications can be proposed whenever deemed necessary)	For info	For action (for despatch to Design department and Configuration Control)	For info		For technical aspects and management
14. Work progress monitoring	For info	For action			
15. Project Plan (both HW and SW) (within **60 calendar days** from Order receipt) and all planned documentation			For competence		For action
16. Project development monitoring					For action
17. Design review documentation (**10 work days** before the date of the event)			For Quality aspects		For technical management
18. Technical documentation certifying validation of own-design products			For Quality aspects		For technical management
19. Own-design product configuration included in OTO MELARA product (baseline)		For info	For info		For action
20. Proposals for Modification to own-design products included in OTO MELARA products	For info		For info		For action and coordination
21. Notification of willingness to perform tests/inspections or agreed manufacturing activities (with notice of at least **10 working days**).			For action		
22. Certificate of Conformity Supplies test certificates and other documentation required to be delivered together with the supply			For action, to be controlled together with materials/ products		
23. Analysis of non-conformities reported by OTO MELARA (form attached to Non-Conformity Report for materials/products under warranty). Must be returned together with the repaired/reworked/replaced materials.			For action.	For info	

[6] STQ: Technical Services of Quality (only at La Spezia plant)
[7] QPM: Quality Program Manager

TABLE 4 DOCUMENTS ISSUED BY THE SUPPLIER THAT IMPACTS ON LOGISTICS DEPT. (CONTINUES FROM TABLE 3)

Documents issued by the Supplier		OTO MELARA departments involved in document despatch				
		Procurement	**Materials management**	**Quality/ Materials Incoming Inspection / STQ[8]/ QPM[9]**	**Logistics**	**Administration, Finance and Control**
24.	Documentation attesting the conformity of products not directly sent to OTO MELARA but to another Supplier for product completion.		For info	For action		For info
25.	Non-conformity report for subcontracted or on-loan materials supplied by OTO MELARA (e.g. equipment), expired materials.	For info	For action Reply within **3 working days** of the report	For info		
26.	Spare parts list and all documents related to the product				For action	
27.	Technical charts for non-metallic materials and chemicals		For action	For info		
28.	Safety data form to be delivered with the first supply		For action			
29.	Shipment document		For action, and to make it visible to the other departments involved.	For info		For info
30.	Documentation envisaged for carrying out activities in OTO MELARA facilities	For action	For info	For info		
31.	Documentation envisaged for carrying out activities in shipyards for setting to work and service to OTO MELARA Customer	For info			For action	
32.	Invoice					For action. Paid according to the result of the Inward Quality Inspection

Note: OTO MELARA departments that receive document for action will distribute them to the other department involved.

[8] STQ: Technical Services of Quality (only at La Spezia plant)
[9] QPM: Quality Program Manager

5 OTO MELARA REQUIREMENTS IDENTIFICATION AND CORRELATION WITH SUPPLIER'S QUALITY MANAGEMENT SYSTEM

5.1 CLASSIFICATION

In the technical data package issued by OTO MELARA, each item, unit, assembly, etc. reports an indication constituted by:

a. a numeric code identifying the criticality class in terms of safety (shown in the title block of the drawing and/or in the parts list)
b. a letter identifying the class of goods in terms of quality requirements (shown on a dedicated drawing legend and/or parts list).

For example:

A1 means: material critical for the safety (number 1) of Non-metallic indefinite material (letter A)..

5.1.1 Criticality Level

The criticality level, which is shown on the drawings (additional legend) and/or the parts list or on an associated list, is a classification attributed to the item, unit or assembly according to the impact on mission safety or operations in case of failed or wrong operation, malfunction or yield.

The attribution takes the following into account:

a. Results of safety analysis conducted according to methods described in international standards and appearing on filed documents
b. degree of mechanical stress or electric load
c. degree of design maturity (derivation or otherwise of the item/assembly from systems, similar assemblies validated at the prototype stage or ones which have provided good proof of function/resistance and are therefore able to undergo comparative engineering analysis covering the requisites)
d. degree of technological/constructional, verification and/or testing difficulties.

The criticality levels are defined in decreasing order in Table 5.

TABLE 5 - CRITICALITY LEVELS

LEVEL	NUMERIC CODE
CRITICALITY LEVEL 1 – CRITICAL CLASS Parts, assemblies, operations and actions associated directly and indirectly with the safety of persons and the system; weapon parts directly subject to the firing gas pressure or associated with the projectile loading function or cartridge case ejection, and in general, highlighted by a Safety Analysis conducted according to the criteria prescribed in the applicable standards.	**1**
CRITICALITY LEVEL 2 – IMPORTANT CLASS Parts, assemblies or operations associated directly and indirectly with the mission functionality or burdensome replacement in terms of time and cost.	**2**
CRITICALITY LEVEL 3 – COMMON CLASS In the absence of the conditions described for the two previous levels.	**3**

In case the order or the contract or the specification cited don't define the safety criticality level, the Supplier shall apply what reported for items of safety criticality level 2 except for the case where it's evident the need to refer to safety criticality level 1.

5.1.2 Commodity classification in terms of quality requirements

The letter identifying the commodity classification in terms of quality requirements is shown on the parts list for visibility by the departments that must be informed.

TABLE 6 - COMMODITY CLASSIFICATION

TYPE OF PRODUCT OR SUPPLY	LETTER CODE
Non-metallic indefinite materials	**A**
Functionally-important non-metallic materials	**B**
Welded structures and mechanical components	**C**
Plant/systems	**D**
Manufacturing using subcontracted materials	**E**
Metallic indefinite materials and unfinished products	**F**
Castings	**G**
Forged and moulded parts	**H**
Electrical control panels, consoles	**I**
Screws, nuts and bolts	**L**
Welding material	**M**
Complete assemblies	**N**
Electrical and electronic components	**O**
Optical and electro-optical components and assemblies	**P**
Software	**Q**
Ammunition	**R**
Hydraulic or pneumatic components	**S**
Activities performed by Suppliers at the OTO MELARA plant (internal)	**T**
Services rendered by Suppliers at the Customer's facility (external)	**U**
Catalogue commercial parts - mechanical	**V**
Supplier developed military products available in a catalogue	**W**
Equipment	**Y**

Two examples of designation are reported as follows:

a. for OTO MELARA La Spezia plant
b. for OTO MELARA BMB Unit (Brescia)

a. an item obtained by machining, safety criticality level 2, commodity class for quality C (mechanical component) is designed as in figure for what relates to legend, additional legend dedicated to safety and quality classification, part list and order

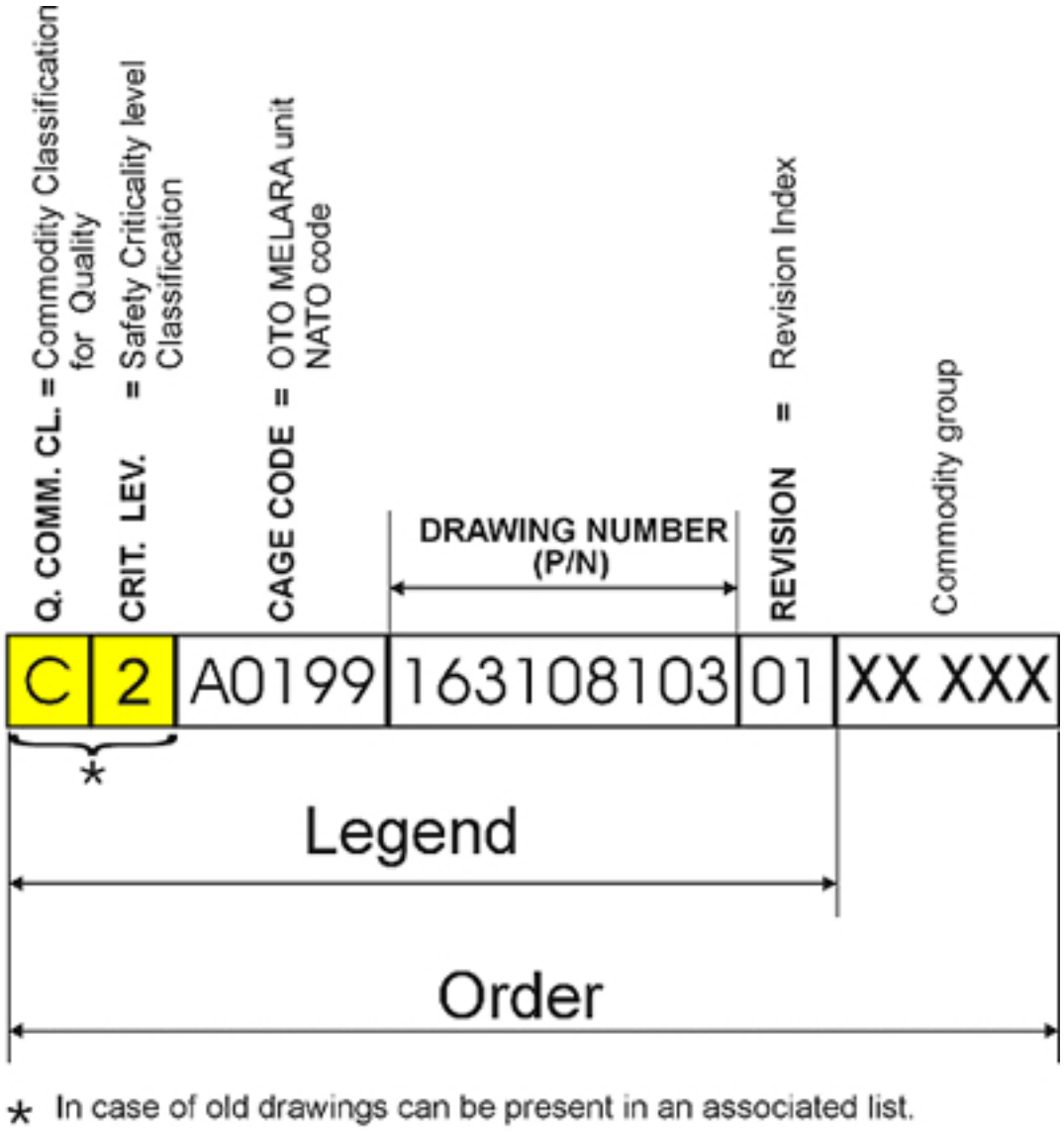

Figure 1 Example of designation (OTO MELARA, La Spezia plant)

b. an item obtained through investment casting (commodity classification G), safety criticality level 1 is designed as in figure for what relates to legend, additional legend dedicated to safety and quality classification, part list and order

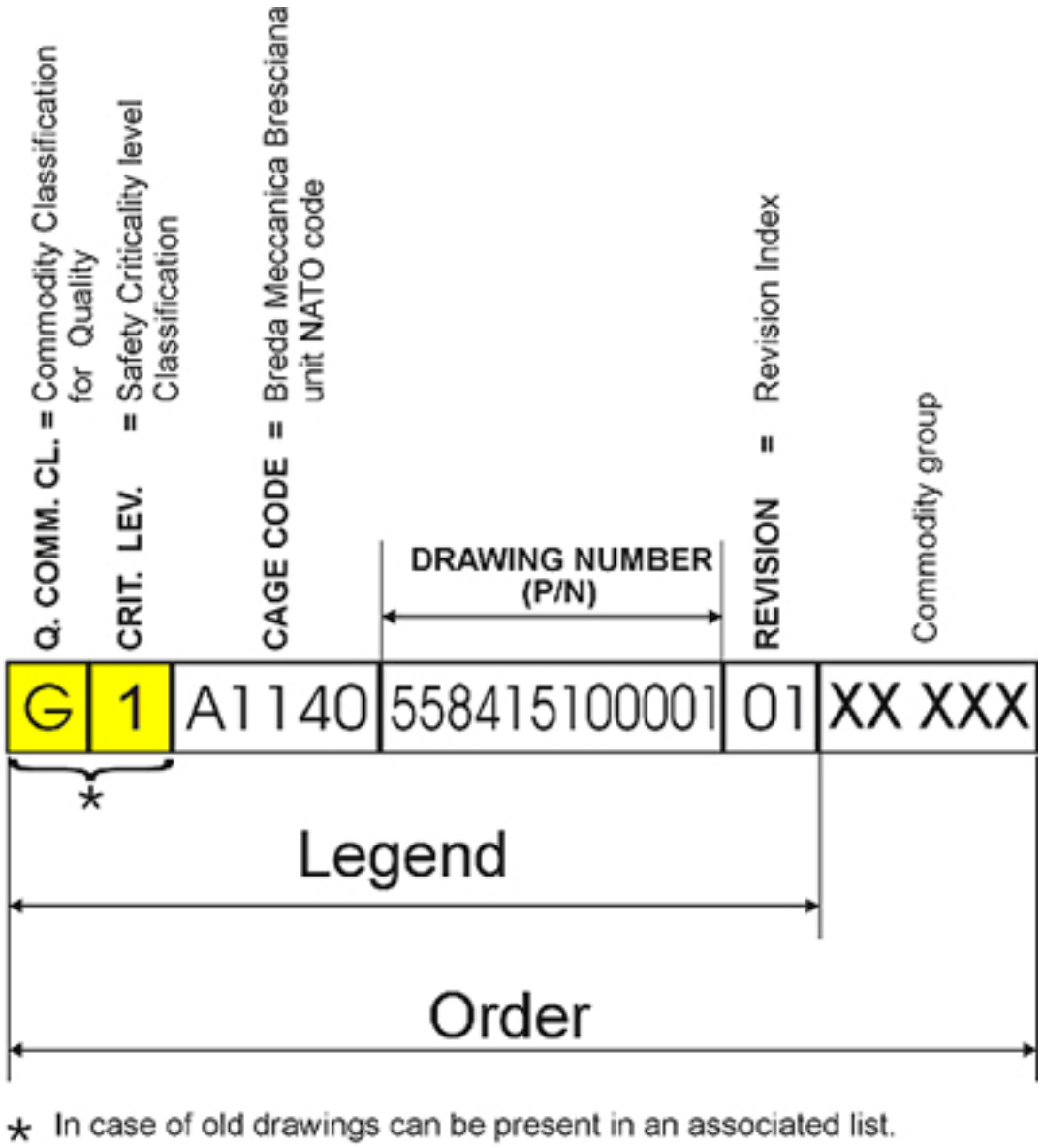

Figure 2 Example of designation (OTO MELARA, Brescia plant)

N.B. The commodity group has significance for OTO MELARA internal processes only and is not disclosed to Suppliers

5.2 CRITICAL CHARACTERISTICS IDENTIFICATION ON DRAWINGS

In drawings critical characteristics for item classified as 1 or 2 critical levels are identified by a symbol, triangle shaped (Δ), which contains the number corresponding to the assigned criticality class.
Supplier shall give to OTO MELARA evidence of records of those characteristics for each item together with the other ones listed in the control sheet.

5.3 SUPPLIER QUALITY SYSTEM LEVEL

As a basis the Supplier Quality System shall conform to ISO 9001 (EN/AS/JISQ 9100 for Aeronautical products).
In general, once established the Supplier's production capability related to the commodity class, before it can receive orders relating to criticality level 1 items, it must have a Quality Management System certified by a recognised body (ISO, AQAP[10], AER-Q with a field of application consistent with the activities to be performed for OTO MELARA) as well as evidence of audits conducted successfully at the Supplier's premises by OTO MELARA Quality personnel.
This is also desirable with level 2 items, in which case certification issued by OTO MELARA Quality can be considered sufficient. OTO MELARA's Supplier List will contain a list of Suppliers with specific competences, features and proof of qualification, which must be kept up to date by the Suppliers also filling in the dedicated questionnaire sent by OTO MELARA Procurement Department.

5.3.1 Sub Suppliers Quality System level

Suppliers with orders of items classified as 1 or 2 in case of use of sub Suppliers shall ascertain their appropriate certification, consistently with what is reported in par. 5.3 above.

[10] Allied Quality Assurance Publication

TABLE 7 CORRESPONDENCE BETWEEN THE SUPPLY CRITICALITY LEVEL AND THE SUPPLIER QUALITY MANAGEMENT SYSTEM LEVEL

Criticality level	Supplier Quality Management System with certification covering activities requested by OTO MELARA	Notes
1	- ISO 9001:2008; - EN/AS/JISQ 9100:2009; AER-Q for Aeronautical products; - AQAP: - AQAP-2110 (NATO QA Requirements for design, development, production if design and development is envisaged); - AQAP-2120 (NATO QA Requirements for production if only production is envisaged); - AQAP-2130 (NATO QA Requirements for inspection and testing if only production is envisaged); - AQAP-2131 (NATO QA Requirements for final inspection if only production is envisaged) - AQAP-2210 (Additional NATO QA requirements for Software).	- Certification by a recognised third-party (ISO 9001:2008, EN/AS/JISQ 9100:2009) or second-party (AQAP, AER-Q). - AQAP requirements will be applicable in accordance with "AQAP-2009 Annex C" and to what reported in detailed prescription for each commodity class.
2	- ISO 9001:2008; - EN/AS/JISQ 9100:2009; AER-Q for Aeronautical products; - AQAP: - AQAP-2110 (NATO QA Requirements for design, development, production if design and development is envisaged); - AQAP-2120 (NATO QA Requirements for production if only production is envisaged); - AQAP-2130 (NATO QA Requirements for inspection and testing if only production is envisaged); - AQAP-2131 (NATO QA Requirements for final inspection if only production is envisaged) - AQAP-2210 (Additional NATO QA requirements for Software).	- Certification by a recognised third-party (ISO 9001:2008, EN/AS/JISQ 9100:2009) or second-party (AQAP, AER-Q). Alternatively: Suitable system structure (proved and certified by visits and audits by OTO MELARA personnel). - AQAP requirements will be applicable in accordance with "AQAP-2009 Annex C" and to what reported in detailed prescription for each commodity class.
3	- ISO 9001:2008; - EN/AS/JISQ 9100:2009; AER-Q for Aeronautical products; - AQAP: - AQAP-2110 (NATO QA Requirements for design, development, production if design and development is envisaged); - AQAP-2120 (NATO QA Requirements for production if only production is envisaged); - AQAP-2130 (NATO QA Requirements for inspection and testing if only production is envisaged); - AQAP-2131 (NATO QA Requirements for final inspection if only production is envisaged) (Manual and procedures adequate to activities as proven by vendor List.	- The Supplier must develop, document, implement and maintain a system that gives a high level of confidence that the items or services meet the requirements. - AQAP requirements will be applicable in accordance with "AQAP-2009 Annex C" and to what reported in detailed prescription for each commodity class.

Note:

1) In case the order or the contract or the specification cited don't define the safety criticality level, the Supplier shall apply what reported for items of safety criticality level 2 except for the case where it's evident the need to refer to safety criticality level 1.

2) If the Supplier has ISO certification only, it must integrate the Quality Plan with the NATO AQAP requirements listed in the "NATO Specific Requirements" of the AQAP applicable to the type of goods supplied. For aeronautical products, if the supply is subjected to AER-Q standards, the Quality Plan shall be in accordance with AER-Q-140.

3) The Supplier will be subject to periodic audits by OTO MELARA Quality (and by its Customers or their Representatives when required) of its Quality System, and to an assessment of it in terms of supplies (Vendor Rating). The Supplier must implement any corrective actions as and when required.

5.4 DESCRIPTION OF OTO MELARA COMMODITY CLASSES

Description of the CLASSES:

Note: the applicability of quality requirements of this document requires items categorisation through:

- a drawing, where classification can be reported (drawing legend)
- or a list or other document referenced to Bill of Materials
- or the specific indication in the Purchase Order (following the indication reported by the requiring party in the request for purchase form) that make explicit and available that information thus determining the requirements.

It is evident that, for example, classes "A, B, D, E, M, V, W" dealing with standard parts, indefinite materials or incorporeal objects as for class Q (software), may not require a drawing intended as a graphic representation of the object but merely as a support where particular requirements or univocal definition of the Qualified Supplier can be reported.
In any case for an appropriate purchase order management it is mandatory that the category the ordered item belongs to is properly identified.

5.4.1 Non-metallic indefinite materials (A)

- hose pipes for compressed gases, flux gases, oils or fuels
- elastomers
- structural adhesive
- blocking thread adhesive
- synthetic materials (nylon, Viton®, PTFE, etc.)
- composite materials
- sheaths
- gaskets
- power cables
- painting products.

5.4.2 Functionally-important non-metallic materials (B)

Crew seats and protections, domes, flooring, panelling and armouring made of composite or ceramic materials.

5.4.3 Welded structures and mechanical components (C)

Turret casing, ballistic protections, frames, mountings, etc.; parts made from indefinite materials for chip removal, cold forging, bending, rolling, etc.

5.4.4 Plant/systems (D)

An assembly of interconnected components and subassemblies, assembled functionally and/or physically to form a functional logic unit for the purpose of achieving a performance.

5.4.5 Work using subcontracted materials (E)

Activities performed by the Supplier using its own equipment and resources on materials belonging to OTO MELARA or End Customer.
Applicable also for Special Processes execution only.
To this class belong also partial activities carried out by Suppliers within a OTO MELARA internal production process.

5.4.6 Metallic indefinite materials and unfinished products (F)

Sections, extruded items, laminated material, pipes made of carbon steel, stainless steel and light alloys.

5.4.7 Castings (G)

Unfinished products for specific applications obtained by casting.

5.4.8 Forged and moulded parts (H)

Unfinished products for specific applications obtained by forging and moulding.

5.4.9 Electrical control panels, consoles (I)

Assemblies able to develop specific functions autonomously or through interconnections with other assemblies.

5.4.10 Nuts, bolts and screws (L)

Mechanical linking/fastening elements capable of performing structural functions.

5.4.11 Welding material (M)

Materials used in welding processes: wire, coated electrodes, gas, fluxes etc.

5.4.12 Complete assemblies (N)

Assemblies of components or equipment designed to perform set functions in a plant or system; they usually provide set performances according to the Supplier's or OTO MELARA's design.

5.4.13 Electrical and electronic components (O)

Loose commercial components or Approved Source or QPL, assemblies or electronic boards. Harnesses.

5.4.14 Optical and electro-optical components and assemblies (P)

Components or assemblies that perform the function of panoramic vision, reconnaissance or aiming the weapon in the visible or infrared spectrum, whether or not equipped with stabilisation of the line of sight and coupled with laser pulse emitters for range finding. They are generally made by specialised firms to specifications approved by OTO MELARA.

5.4.15 Software (Q)

A set of programs, rules, procedures, documentation and data relating to the operations of digital calculator -based system.

5.4.16 Ammunition (R)

Parts of subassemblies forming the projectile shell, the fuse, any driving parts, energy generating components, batteries, cartridge cases, sabot, links; explosive charges, propellants, primers, artifices, complete ammunition, containers and carrying boxes.

5.4.17 Hydraulic or pneumatic components (S)

Parts or subassemblies for the generation and/or distribution of fluid energy: pumps, pressure relief valves, sequence valves, pressure reduction valves, electric or mechanical directional valves, servo-valves, proportional valves, bladder and piston accumulators, cylinders, servo-cylinders, motors, angular motors, etc.

5.4.18 Activities performed by Suppliers at the OTO MELARA plant (internal) (T)

A series of activities assigned to Suppliers who, as well developing the product at their own facilities, assembly it on the system on the OTO MELARA production lines.

5.4.19 Services rendered by Suppliers at the Customer's facility (external) (U)

A series of activities assigned to Suppliers having the organisational structure, means and skills to develop technical activities, installation and logistics at the End Customer's.

5.4.20 Catalogue commercial parts - mechanical (V)

Commercial mechanical parts functionally important reported in dedicated catalogues such as MIL specifications with part number beginning with MS, AN, NAS shall be produced by Qualified Producers listed (see https://assist.daps.dla.mil/). Those parts shall not be altered or subjected to modifications.

5.4.21 Supplier developed military products available in a catalogue (W)

Various military products like: various calibre weapons or weapon systems reported in catalogues and technical specifications issued by the manufactures, suitable to be installed on naval mounting or vehicle turrets or portable as armoured vehicle personnel equipment completion.

5.4.22 Equipment (Y)

The following main categories of equipment are identified:

a. machining equipment (YL)
b. measuring/test equipment (YC)
c. lifting equipment (YS)
d. logistic equipment (YM)

All equipment shall conform to applicable European Directive. Waivers shall be notified to OTO MELARA and receive written approval.

5.4.22.1 Machining equipment (YL)

These are devices/fixtures that allow the execution of one or more mechanical machining by locking the work piece in position and orientating it as required; they may be equipped with clamping elements that are controlled mechanically, hydraulically or pneumatically, in which case they provide a man-machine interface for control purposes.

5.4.22.2 Measuring equipment (YC)

These are devices that allow verification of the geometrical, mechanical and electrical features. They may be comprised of parts subjected to internal pressure.
They allow the performance of a functional test with the relevant measurements if required.

5.4.22.3 Lifting equipment (YS)

These are devices used to lift the product in its final configuration or any parts thereof.

5.4.22.4 Logistic equipment (YM)

These are devices that allow the execution of maintenance tasks described in the maintenance plan developed for the product and/or troubleshooting of the equipment that makes up the system.

6 SYNOPTIC TABLES FOR COMMODITY CLASSES WITH RELEVANT REQUIREMENTS FOR ACTIVITIES AND DOCUMENATION REQUESTED WITH THE SUPPLY AND RELATED TO THEIR CRITICALITY LEVEL

Requirements related to activities and documentation/certification to be supplied to OTO MELARA are defined according to commodity and criticality classes (paragraphs 5.4 and 5.1.1).

Requirements reported in the following synoptic tables are to be considered as the minimum required to the Supplier in the absence of more precise indications or needs expressed by the right Company function.

Requirements refer to different times/phases:

a. Before starting production (in the act of accepting the order), with the aim to take a view and control of the manufacturing process to introduce possible corrections and integrations thus reducing non conformity or delay risks; the documents relevant to this phase are for instance:
   - Quality Plan (PQ); Configuration Management Plan (CMP);
   - Manufacturing and Control Plan (MCP);
   - Acceptance Test Procedure (ATP);
   - Welding Procedure Specification (WPS).

   These documents require OTO MELARA approval.

b. In the act of delivering manufactured items with the aim of having required quality evidences for instance: Certificate of Conformity and certifications. Test report of functional/dimensional/performance checks and various certifications, such as certificates stating the conformity of the characteristics of the materials used.

NOTES:

1) The Supplier making reference to the synoptic tables relevant to the applicable Commodity Class shall carry out activities and supply documents and evidences as requested;
2) In case OTO MELARA's technical data package does not define the criticality level the Supplier shall apply what reported for items of safety criticality level 2 except for the case where it's evident the need to refer to safety criticality level 1.
3) In those cases when Commodity Class of the item to be supplied is not referable to the synoptic tables paragraphs 1÷9 apply;
4) Synoptic tables do not report documentation required by law described for some cases at paragraphs 8.8, 8.9 (non-metallic materials technical sheets and safety data sheets for chemicals);
5) When the supply consists of design and Development activities the Supplier shall apply also the requirements of the specific product in accordance with Table 9.
6) Shelf life: The materials subject to wear must have, at the time of receiving in OTO MELARA, a residual life not less than 75% of the useful life specified by the manufacturer, unless otherwise specified by OTO MELARA in the documentation accompanying the purchase order.

TABLE 8 INSTRUCTIONS FOR ACTIVITIES AND DOCUMENTS ACCORDING TO THE CLASSIFICATION

CLASS	QP [11]	MCP [12]	COC [13]	FAI [14]	TT [15]	WPS [16]	SPC [17]	ATP [18]	PQR [19]	BT [20]	DCC [21]	QSL [22] (*)
Non-metallic indefinite materials												
A1		✓	✓[23]									ISO 9001/ AQAP-2131
A2			✓[24]									ISO 9001
A3			✓[25]									ISO 9001
Functionally important non-metallic materials												
B1	✓	✓	✓[23]	✓			✓	✓		✓[26]	✓	ISO 9001/ AQAP-2120
B2		✓	✓[24]	✓			✓	✓		✓[26]	✓	ISO 9001/ AQAP-2130
B3			✓[25]				✓	✓			✓	ISO 9001/ AQAP-2130
Welded structures and mechanical components												
C1	✓	✓	✓[23]	✓		✓	✓		✓	✓[26]	✓	ISO 9001/ AQAP-2120
C2		✓	✓[24]	✓		✓	✓		✓	✓[26]	✓	ISO 9001/ AQAP-2120
C3		✓	✓[25]			✓	✓		✓		✓	ISO 9001/ AQAP-2120

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[11] **QP** Quality Plan always includes the MCP;
[12] **MCP** Manufacturing and Control Plan;
[13] **COC** Certificate of Conformity;
[14] **FAI** First Article Inspection, to be repeated in the event of important manufacturing process or Suppliers change; it is mandatory for supplies of aeronautical products;
[15] **TT** Type Tests;
[16] **WPS** Welding Procedure Specification;
[17] **SPC** Applied Special Process Certificate:
HTC: Heat Treatment Certificate: can consist of certificate relevant to the obtained mechanical characteristics such as hardness, resilience, tensile strength, furnace, according to characteristics criticality level; **STC**: Surface Treatment Certificate; **NDT**: Non Destructive Tests;
[18] **ATP** Acceptance Test Procedure and relevant Test Report;
[19] **PQR** Procedure Qualification Record (for welding);
[20] **BT** Ballistic Test when required;
[21] **DCC** Dimensional Characteristics Certificate;
[22] **QSL** Quality System Level;
[23] **COC** Certificate of Conformity: supported by Inspection Certificate "type 3.1" according to UNI EN 10204 that it is considered also applicable to non-metallic Certificate of Conformity;
[24] **COC** Certificate of Conformity: supported by Inspection Certificate "type 3.1" according to UNI EN 10204
[25] **COC** Certificate of Conformity (as an alternative for parts not based on OTO Melara requirements, Declaration of Conformity on "type 2.1" according to UNI EN 10204);
[26] When applicable;

TABLE 8 (CONTINUED)

CLASS	QP [27]	MCP [28]	COC [29]	FAI [30]	TT [31]	WPS [32]	SPC [33]	ATP [34]	PQR [35]	BT [36]	DCC [37]	QSL [38]
Plant/systems [39]												
D1	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	ISO 9001/ AQAP-2120
D2		✓	✓	✓	✓	✓	✓	✓	✓		✓	ISO 9001/ AQAP-2120
D3			✓				✓	✓			✓	ISO 9001/ AQAP-2130
Work using subcontracted materials [40]												
E1	✓	✓	✓	✓		✓	✓		✓		✓	ISO 9001/ AQAP-2120
E2		✓	✓	✓		✓	✓		✓		✓	ISO 9001/ AQAP-2120
E3		✓	✓				✓				✓	ISO 9001/ AQAP-2130

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[27] **QP** Quality Plan always includes the MCP;
[28] **MCP** Manufacturing and Control Plan;
[29] **COC** Certificate of Conformity;
[30] **FAI** First Article Inspection, to be repeated in the event of important manufacturing process or Suppliers change; it is mandatory for supplies of aeronautical products;
[31] **TT** Type Tests charged to the Supplier when applied to products designed by it;
[32] **WPS** Welding Procedure Specification;
[33] **SPC** Applied Special Process certificate:
HTC: Heat Treatment Certificate: can consist of certificate relevant to the obtained mechanical characteristics such as hardness, resilience, tensile strength, furnace, according to characteristics criticality level; **STC**: Surface Treatment Certificate; **NDT**: Non Destructive Tests;
[34] **ATP** Acceptance Test Procedure and relevant Test Report;
[35] **PQR** Procedure Qualification Record;
[36] **BT** Ballistic Test when required;
[37] **DCC** Dimensional Characteristics Certificate;
[38] **QSL** Quality System Level;
[39] When assemblies are designed by the Supplier see also Table 9;
[40] Includes also intermediate manufacturing operation;

TABLE 8 (CONTINUED)

CLASS	MCP [41]	FAI [42]	CAC [43]	TSC [44]	ITC [45]	COC [46]	MA [47]	HTD [48]	HC [49]	BT [50]	REFERENCE STANDARDS	QSL [51]
Metallic indefinite materials and unfinished products												
F1		✓	✓			✓[52]	✓			✓[53]	In accordance with indications contained in order/ drawings or in their absence, UNI o ISO standards.	ISO 9001/ AQAP-2130
F2			✓			✓[54]	✓			✓ 53	"	ISO 9001/ AQAP-2130
F3			✓			✓[55]	✓				"	ISO 9001/ AQAP-2130
Castings												
G1	✓	✓	✓	✓	✓	✓ 52					In accordance with indications contained in order/ drawings or in their absence, UNI o ISO standards.	ISO 9001/ AQAP-2130
G2	✓	✓	✓	✓	✓	✓ 54					"	ISO 9001/ AQAP-2130
G3			✓			✓ 55					"	ISO 9001/ AQAP-2130
Forged and moulded parts												
H1	✓	✓	✓	✓	✓	✓ 52	✓	✓	✓		In accordance with indications contained in order/drawings or in their absence, UNI o ISO standards.	ISO 9001/ AQAP-2130
H2	✓	✓	✓	✓	✓	✓ 54		✓	✓		"	ISO 9001/ AQAP-2130
H3			✓			✓ 55			✓		"	ISO 9001/ AQAP-2130

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[41] **MCP** Manufacturing and Control Plan;
[42] **FAI** First Article Inspection, to be repeated in the event of important manufacturing process or Suppliers change; it is mandatory for supplies of aeronautical products;
[43] **CAC** Casting Chemical Analysis certificate;
[44] **TSC** Tensile Strength certificate;
[45] **ITC** Impact test Certificate;
[46] **COC** Certificate of Conformity;
[47] **MA** Metallographic Analysis;
[48] **HTD** Heat Treatment Diagram;
[49] **HC** Hardness Certificate;
[50] **BT** Ballistic test when required;
[51] **QSL** Quality System Level;
[52] **CoC** Certificate of Conformity: supported by Inspection Certificate "type 3.1" according to UNI EN 10204 that it is considered also applicable to non metallic Certificate of Conformity;
[53] When applicable;
[54] **CoC** Certificate of Conformity: supported by Inspection Certificate "type 3.1" according to UNI EN 10204;
[55] **CoC** Certificate of Conformity (as an alternative for parts not based on OTO Melara requirements, Declaration of Conformity on "type 2.1" according to UNI EN 10204);

TABLE 8 (CONTINUED)

CLASS	QP [56]	MCP [57]	COC [58]	FAI [59]	TT [60]	WPS [61]	SPC [62]	ATP [63]	PQR [64]	BT [65]	DCC [66]	QSL [67]
Electric panels, consoles [68]												
I1	✓	✓	✓	✓	✓			✓			✓	ISO 9001/ AQAP-2120
I2		✓	✓	✓	✓			✓			✓	ISO 9001/ AQAP-2120
I3		✓	✓					✓			✓	ISO 9001/ AQAP-2130
Complete assemblies (68)						[69]						
N1	✓	✓	✓	✓	✓		✓	✓			✓	ISO 9001/ AQAP-2120
N2		✓	✓	✓	✓		✓	✓			✓	ISO 9001/ AQAP-2120
N3		✓	✓					✓			✓	ISO 9001/ AQAP-2130
Electrical and electronic components [70] [71]												
O1	✓	✓	✓	✓	✓			✓				ISO 9001/ AQAP-2120
O2		✓	✓	✓	✓			✓				ISO 9001/ AQAP-2120
O3			✓									ISO 9001/ AQAP-2130

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[56] **QP** Quality Plan always includes the MCP; it does not apply for commodity class "O" for catalogue commercial components;

[57] **MCP** Manufacturing and Control Plan; it does not apply for commodity class "O" for catalogue commercial components;

[58] **COC** Certificate of Conformity;

[59] **FAI** First Article Inspection, to be repeated in the event of important manufacturing process or Suppliers change; it is mandatory for supplies of aeronautical products; it does not apply for commodity class "O" for catalogue commercial components;

[60] **TT** Type Tests (Qualification Tests);

[61] **WPS** Welding Procedure Specification;

[62] **SPC**: Applied Special Process certificate: **HTC**: Heat Treatment Certificate: can consist of certificate relevant to the obtained mechanical characteristics such as hardness, resilience, tensile strength, furnace, according to characteristics criticality level; **STC**: Surface Treatment Certificate; **NDT**: Non Destructive Tests;

[63] **ATP** Acceptance Test Procedure and relevant Test Report;

[64] **PQR** Procedure Qualification Record;

[65] **BT** Ballistic Test when required;

[66] **DCC** Dimensional Characteristics Certificate;

[67] **QSL** Quality System Level;

[68] When assemblies are designed by the Supplier see also Table 9;

[69] For mechanical structures refer to Class "C" requirements;

[70] **Electric and electronic components:**

- In case components are from stock and when Supplier is a dealer, parts shall not have been manufactured more than 5 years before the delivery date (unless otherwise indicated in the order);
- In case the Supplier is the Producer, parts shall not have been manufactured more than 5 years before the delivery date and it is required a test report not older than one year;
- In case of obsolescence it is required that the status is declared together with the information about the date of production cessation;
- The broker shall provide a certificate of conformance of the whole supply, to which a copy of the certification originally issued by the manufacturer shall be attached.

[71] When the products are designed by the Supplier and their are not available in a catalogue, see also Table 9;

TABLE 8 (CONTINUED)

CLASS	QP [72]	MCP [73]	COC [74]	FAI [75]	TT [76]	WPS [77]	ATP [78]	PQR [79]	BT [80]	SPC [81]	DCC [82]	QSL [83]
Ammunition [84]												
R1 [85]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/2210, AQAP-2120 [86]
R2	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	ISO 9001/ AQAP-2110/2210, AQAP-2120 [87]
R3		✓	✓				✓			✓	✓	ISO 9001/ AQAP-2131
Hydraulic and pneumatic components [88]												
S1	✓	✓	✓	✓	✓		✓					ISO 9001/ AQAP-2120
S2		✓	✓	✓	✓		✓					ISO 9001/ AQAP-2130
S3			✓									ISO 9001/ AQAP-2131
Catalogue mechanical parts												
V1			✓		✓		✓					ISO 9001
V2			✓		✓		✓					ISO 9001
V3			✓									ISO 9001

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[72] **QP** Quality Plan always includes the MCP; it does not apply for commodity class "S" for catalogue commercial components;
[73] **MCP** Manufacturing and Control Plan; it does not apply for commodity class "S" for catalogue commercial components;
[74] **COC** Certificate of Conformity;
[75] **FAI** First Article Inspection, to be repeated in the event of important manufacturing process or Suppliers change; it is mandatory for supplies of aeronautical products; it does not apply for commodity class "S" for catalogue commercial components;
[76] **TT** Type Tests;
[77] **WPS** Welding Procedure Specification;
[78] **ATP** Acceptance Test Procedure and relevant Test Report;
[79] **PQR** Procedure Qualification Record;
[80] **BT** Ballistic Test when required;
[81] **SPC** Applied Special Process certificate:
HTC: Heat Treatment Certificate: can consist of a certificate relevant to the obtained mechanical characteristics such as hardness, resilience, tensile strength, furnace, according to characteristics criticality level; **STC**: Surface Treatment Certificate; **NDT**: Non Destructive Tests
[82] **DCC** Dimensional Characteristics Certificate;
[83] **QSL** Quality System Level;
[84] **Ammunition or its parts** produced with OTO MELARA Technical data Package; for standard ammunition (catalogue) see requirements at paragraph 14.2;
[85] **Complete ammunition**;
[86] **QSL** AQAP-2110/AQAP-2210 if supply contains parts designed by the Supplier;
[87] **QSL** AQAP-2110/AQAP-2210 if supply contains parts designed by the Supplier;
[88] When the products are designed by the Supplier and they are not available in a catalogue, see also Table 9;

TABLE 9 INSTRUCTIONS FOR DESIGN (SEE PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS)

DESIGN	QP [89]	CMP [90]	COC [91]	ATP [92]	TS [93]	LS [94]	V [95]	QSL [96] (*)
1	✓	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/ AQAP-2210
2	✓	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110, AQAP-2210
3	✓		✓		✓	✓	✓	ISO 9001/ AQAP-2110, AQAP-2210

Note 1: These requirements apply to all Commodity Classes when subject of design and development.
(*) Note 2: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

TABLE 10 INSTRUCTIONS FOR COMPONENTS OF OPTICAL AND ELECTRO-OPTICAL ASSEMBLIES DESIGNED BY THE SUPPLIER

CLASS	QP	COC	ATP	TT [97]	DEDICATED TECHNICAL SPECIFICATIONS [98]	LS	V	QSL (*)
Components of optical and electro-optical assemblies								
P1	✓	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/AQAP-2210
P2	✓	✓	✓		✓	✓	✓	ISO 9001/ AQAP-2110/ AQAP-2210
P3	✓	✓			✓	✓	✓	ISO 9001/ AQAP-2110 / AQAP-2210

See also paragraph: PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS and Table 5.
(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

TABLE 11 INSTRUCTIONS FOR SOFTWARE

(SEE PARAGRAPH SOFTWARE FOR DETAILS)

SOFTWARE	QP	CMP	COC	ATP	SVDD [99]	V	QSL (*)
Q1	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/AQAP-2210
Q2	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/AQAP-2210
Q3	✓		✓		✓	✓	ISO 9001/ AQAP-2110/AQAP-2210

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[89] **QP** Quality Plan inclusive of Design Development Plan; can contain the Configuration Management Plan;
[90] **CMP** Configuration Management Plan;
[91] **COC** Certificate of Conformity;
[92] **ATP** Acceptance Test Procedure and relevant Test Report;
[93] **TS** Technical Specification;
[94] **LS** Documentation for Logistic Support: Use and maintenance Manual, Illustrated Parts list;
[95] **V** Validation of design and development;
[96] **QSL** Quality System Level to be applied; in case of software development also AQAP-2210 applies;
[97] **TT** Type Tests;
[98] **TS** Technical Specification exhaustively describing all performances, operational and storage environmental conditions;
[99] **SVDD** Software Version Description Document

Table 12 INSTRUCTIONS FOR SCREWS, NUTS AND BOLTS

CLASS	CAC [100]	HC [101]	VDCC [102]	COC [103]	REFERNCE STANDARDS	QSL [104]
FASTENERS (SCREWS AND NUTS) L						
RESISTANCE CLASS >8.8 AND DIA ≥ 8MM	✓	✓	✓	✓	In accordance with indications contained in order/drawings or in their absence, UNI o ISO standards.	ISO 9001/ AQAP-2131
RESISTANCE CLASS <8.8		✓		✓	"	ISO 9001
STAINLESS STEEL				✓	"	ISO 9001

TABLE 13 REQUIREMENTS FOR WELD MATERIAL

CLASS	CAC	MPC [105]	COC		QSL
WELD MATERIAL M	✓	✓	✓	Identification on wire/electrode container	ISO 9001/ AQAP-2130

TABLE 14 REQUIREMENTS FOR SUPPLIER DEVELOPED MILITARY PRODUCTS AVAILABLE IN A CATALOGUE

CLASS	TS [106]	V [107]	ATP [108]	LS [109]	COC	QSL (*)
W	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/ AQAP-2210

(*) Note: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q

[100] **CAC** Casting Chemical Analysis certificate;
[101] **HC** Hardness Certificate;
[102] **VDCC** Visual/Dimensional inspection Certificate;
[103] **COC** Certificate of Conformity;
[104] **QSL** Quality System Level to be applied;
[105] **MPC** Mechanical Properties Certificate;
[106] **TS** Technical Specification inclusive of interface specification and installation drawings;
[107] **V** Validation certificate of design and development;
[108] **ATP** Acceptance Test Procedure and relevant Test Report;
[109] **LS** Documentation for Logistic Support: Use and maintenance Manual, Illustrated Parts list;

TABLE 15 INSTRUCTIONS FOR EQUIPMENT/FIXTURES DESIGNED BY THE SUPPLIER

CLASS	COC [110]	CEDC [111]	TD [112]	TC [113]	ATP [114]	UM [115]	QSL [116] (*)
Y Equipment/Fixtures							
YL	✓	✓	✓	✓		✓	ISO 9001
YC [117]	✓	✓	✓	✓		✓	ISO 9001
YS	✓	✓	✓	✓		✓	ISO 9001
YM	✓	✓	✓	✓	✓	✓	ISO 9001/ AQAP-2110/ AQAP-2210/ AQAP-2120 AQAP-2130 [118]

See also what is reported at the paragraph: EQUIPMENT DESIGNED BY THE SUPPLIER

Note 1: In the case of equipment designed by OTO MELARA, in addition to the provisions of the Purchase Order and the related technical documentation, the supplier shall apply what is provided for class "N".
(*) Note 2: In the case of Aeronautical products, the ISO 9001 Quality System Level is replaced with EN/AS/JISQ 9100; AQAP Quality System Level is replaced with the corresponding AER-Q.

TABLE 16 REFERENCES FOR COMMODITY CLASSES WHICH REQUIREMENTS ARE REPORTED IN DEDICATED PARAGRAPH

CLASS	PARAGRAPH RQA0001
T Activities performed by Suppliers at the OTO MELARA plant (internal)	**16**
U Services rendered by Suppliers at the Customer's facility (external)	**17**

[110] **COC** Certificate of Conformity;
[111] **CEDC** CE Declaration of Conformity (in case of equipment designed by the Supplier under its responsibility);
[112] **TD** Technical Dossier/Technical Documentation (in case of equipment designed by the Supplier under its responsibility, available on demand in accordance to the applicable European Directive);
[113] **TC** Test Certificate;
[114] **ATP** Acceptance Test Procedure and relevant Test Report;
[115] **UM** User Manual, Parts list, etc. in accordante to the applicable European Directive;
[116] **QSL** Quality System Level to be applied;
[117] **YC** **Includes also YP** used in previous versions of this document (up to RQA0001-02);
[118] **QSL** **For equipment YM:** if designed by the Supplier: ISO 9001/AQAP-2110/AQAP-2210; If produced on the basis of Technical data package produced by OTO MELARA: ISO 9001/AQAP-2120;

7 DEFINITIONS AND GENERAL REQUIREMENTS

Additional requirements, specific for an order, can be established by OTO MELARA in separate documents which will supersede this document.
Therefore, should a conflict with this document arise, the Supplier shall conform to the specific document.
The following paragraphs, besides defining general requirements, have the aim to give an agreed meaning to terms and definition used in this document. For all other cases ISO 9000:2005 e NATO AQAP glossaries apply.
For Aeronautical Products the EN/AS/JISQ9100 requirements, which prevail over what is reported in the following paragraphs, apply.

7.1 IDENTIFICATION AND TRACEABILITY

7.1.1 Identification

By identification is meant a system which, with suitable means (markings, punching, plates, tags, transport documents), allows identification of the type and denomination of the various products throughout the production process. Identification is assured by correlation between the physical products and the identification data shown on the markings. The Supplier is responsible for providing identification means for supplied product.

7.1.2 Traceability

By traceability is meant a system that allows each product or batch of products to be recognised and distinguished from other identical ones but made separately and under different conditions and at different times, and to be correlated with the documentation recording the processes, inspections and tests undergone by the system.
The Supplier agrees to maintain throughout the production cycle adequate identification of the materials, components and anything else received for subcontracted work, and to ensure proper correspondence as explained in the preceding paragraph.

7.1.2.1 Minimum Requirements
The system shall identify, at least, part origin, manufacturing date, lot and evidence of acceptance.

7.1.2.2 Identification Methods
For those items for which it is required the identification number shall be univocal.
When traceability is required items and material lots shall contain an univocal identification such as serial number, lot number and date codes. Methods and marking position shall be indicated in technical documents.

7.1.2.3 Data retrieval
Item records, material, processes and controls shall be identified to ease their retrieval.

7.1.2.4 Data preservation
The recordings must be kept in a safe and accessible place for at least 10 years and 15 years for the documentation of components with critical level 1.

7.1.2.5 Traceability Plan

When applicable the Supplier shall prepare a traceability plan listing items and materials requiring serialisation and/or lot control explaining methods to assure an effective traceability.

7.2 STORAGE

All the necessary precautions must be taken to safeguard integrity of the materials.
The following rules apply, in particular:

a. the stores must be suitable for protecting materials awaiting processing or despatching; the materials must be accompanied by the documents/tags specified in the internal procedures, allowing correct identification and verification of their test status
b. materials with a limited shelf life must be managed correctly
c. materials requiring controlled temperature and humidity must be stored in suitable areas
d. components that are sensitive to electrostatic discharge must be stored in suitable containers, in such a way as to safeguard their integrity (according to OTO MELARA procedure PF-040-22)
e. materials supplied by OTO MELARA for subcontracted work must be stored in a suitably identified area, according to their characteristics; these materials must be permanently identified by means of the associated Withdrawal order; materials with a limited life must be handled according to their expiry date; materials passed their use-by-date must be returned to OTO MELARA Materials Management for replacement.

7.3 SPECIAL AND/OR CRITICAL PROCESSES

A special process is defined as a process the results of which cannot be fully ascertained by subsequent product inspections or tests, and defects of which are only revealed when the product is put into use or after it has been installed and has been subjected to use and/or after some time from its delivery or commissioning, with permanence of the product in the environment of intended use.
A critical process is defined as a process that if not correctly carried out can induce risks for personnel safety and product integrity; a critical process can be also a special process.

OTO MELARA considers the following processes as special:

a. welding and braze welding
b. heat treatments
c. gluing
d. painting
e. surface treatment
f. wiring of electrical equipment
g. hand and wave soldering of printed circuits, surface assembly soldering
h. forming of composite materials
i. Non Destructive Tests NDT.

it's considered special and critical the process of :
ammunition production.

For these processes OTO MELARA requires:

- PROCESS QUALIFICATION/CERTIFICATION
- PROCESS SPECIFICATION.

7.3.1 Process qualification/Certification

For qualification or certification of a procedure (by a third recognized body or by a company which quality standards are known and recognized by OTO MELARA) is meant the ensemble of activities necessary to demonstrate that an operational procedure can cover those requirements reported in clearly identified international standards (such as UNI EN, ISO, DIN, SAE AMS, ASTM etc.)
Qualification activity can be carried out by OTO MELARA or by trustworthy Agencies.
The Supplier shall attach evidences of qualification or certification to MCP (Manufacturing and Control Plan) when required.
The Supplier must send this documentation to OTO MELARA prior to consignment of the first lot of the supply.

7.3.2 Process specification

It is a document that demonstrates that Supplier's organization has absorbed the international standard (related to that process) or, if the process is proprietary, all technical aspects are clearly focused, by issuing an operational procedure containing parameters, technical requirements, methods for process control to reach product quality requirements.
That document shall be approved by OTO MELARA Quality and made promptly available to operators in the relevant work place.
Unless otherwise specified on the drawing and/or order, OTO MELARA special process specifications must be applied. Examples of identification codes by process are: OTO-RS (surface treatments); OTO-TT (heat treatments); OTO-PS (surface polishing); OTO-VE (painting); OTO-GO (rubber parts); PF (manufacturing processes), etc..
If the Supplier intends to adopt its own specifications, they must be submitted for approval to OTO MELARA Quality (Materials Incoming Inspection and/or Product Quality) within **30 days** of receipt of the order, and anyway before commencement of activities.
For welding, please refer to the subsection entitled: GENERAL REQUIREMENTS FOR WELDED JOINTS AND UNWELDED MECHANICAL/ELECTRICAL CONNECTIONS.

When the supply involves painting not dependant on OTO MELARA specifications, the Supplier must attach to the MCP, if there is one, details of the painting cycle, as well as product data sheets and the thickness of the films applied.
If there is no MCP, the Supplier must send this documentation to OTO MELARA before consignment of the first lot of the supply.

7.3.3 Welding

For welding make reference to the dedicated paragraph: GENERAL REQUIREMENTS FOR WELDED JOINTS AND UNWELDED MECHANICAL/ELECTRICAL CONNECTIONS

7.3.4 Painting

When supply includes painting not bound to OTO MELARA specifications the Supplier shall attach to the MCP, when required, the painting procedure inclusive of products technical sheets and indication of film thickness.
In case the MCP is not required the Supplier shall send the above mentioned documentation prior to first lot delivery for OTO MELARA Quality approval.

7.3.5 Heat Treatments

When supply consists of Heat Treatments execution on blanks or parts machined at OTO MELARA or at OTO MELARA's Suppliers facilities what reported at paragraphs 7.3.1 e 7.3.2 relevant to qualification level or procedure specification applies.

The Supplier shall produce the evidences related to the executed treatments by issuing the appropriate certificates.
When heat treatment is part of castings or moulded parts supply the relevant evidences shall be delivered included in the required documentation.
When mechanical characteristics are determined by initial treatment (such as: austenitizing-quench-and-temper) the exact treatment temperature (i.e. tempering temperature) shall be recorded and made available in the delivery documentation to permit the accurate determination of possible further treatments (i.e. stress relieving) without altering the mechanical properties.
Temperature vs. time diagram of the treatments that determines mechanical properties gives the required information.
The Supplier shall be in condition to show evidence that treatment equipment is under control and adequate to the envisaged treatment:

- furnaces with their relevant qualified temperature ranges, thermal uniformity in the working zones (Pyrometry), type and atmosphere control;
- quenching systems and their control;
- equipment: hardness machines, testing devices etc.

OTO MELARA Quality will establish inspections for Supplier qualification, for that purpose specific check list for evaluation of Supplier's process conformity to applicable international standards are available. These check lists can be sent to Suppliers to be duly filled and sent back to OTO MELARA Quality (Q/SQ Suppliers dept.) for evaluation.

7.4 TEST AND PROCESSING INSTRUMENTS/EQUIPMENT

The required instruments and equipment must be handled according to current standards (ISO 9001:2008 / ISO 10012) or other standards if specified in the contract. The serial numbers, the accuracy class and the expiry date of the test instruments and equipment calibration must be recorded on documents consigned to OTO MELARA.

Special cases:

a. Gauges/equipment/instruments belonging to OTO MELARA: except for the need to define, on the Purchase Order, who should carry out the periodic inspection of gauges/equipment/tools which may be supplied by OTO MELARA, the Supplier is responsible for using them in a correct way respecting the maintenance deadlines provided and safeguarding their conservation;
b. Supplier's gauges and positioners used: these must undergo an initial test prior to use and periodic verification to confirm their validity.

The Supplier shall maintain the list of gauges/equipment/instruments belonging to OTO MELARA duly updated.

7.5 NON-DESTRUCTIVE TESTS[119] (NDT)

Non-Destructive Tests (NDTs) must be performed by personnel qualified according to UNI/ISO, ASTM[120] and AWS[121] standards or according to the Supplier's internal qualification procedures approved by a level III NDT operator.

[119] These are tests performed to establish the integrity of a part or the success of a process using means of analysis that do not require the part to be sectioned or destroyed;
[120] American Society for Testing Materials;
[121] American Welding Society;

Note: For non-OTO MELARA designs, the Supplier must comply with the welding specifications and the NDTs indicated by the company handling the design. These documents will be referred to in the Order / Purchase Agreement.

7.6 EXECUTION OF THE FAI (FIRST ARTICLE INSPECTION)

FAI purpose is to give objective evidence that design characteristics and requirements are appropriately understood, accountable, verified and documented. The documentation generated and submitted to OTO MELARA will be based on recordings that allow checking the full compliance of the product with the applicable requirements, the assessment of the root causes of every non-conformity and the effective corrective action taken. As part of the Aeronautical supplies, the FAI must be performed on all products (except for catalogue products). The recognized reference standard is the standard SAE AS EN 9102 (Aerospace series - Quality systems - First article inspection).For aeronautical products 100% verification of drawing characteristics is required, for other products it is possible to identify by agreement with OTO MELARA the characteristics to be verified.
The FAI is the inspection of the first product/sample made, and must be carried out in the stage at which it is possible to verify its respect to the envisaged configuration, the compliance with the documentation which defines requirements and that all envisaged activities have been carried out and the correlated documentation has been prepared and defined in such a way to ensure repeatability of the manufacturing and control operations.
If the product supplied is an assembly documentation shall report evidence of any constituting parts.
The FAI highlights details that are not visible and it is also the first verification of the correct manufacture of the product.

The FAI result (based on extensive documentation submitted by the Supplier or made in the presence of OTO MELARA staff and possibly of the final Customer) is binding for the continuation of the series production. It will not be possible to proceed before the approval of the FAI by OTO MELARA. The approval of the FAI results provides evidence that the production process, the production documentation and the equipment are suitable for producing parts and assemblies that meet the requirements.
The FAI must be repeated and must be presented in a formal way to OTO MELARA if changes occur that invalidate the original results already approved in the previous FAI (for example, engineering changes, changes to the manufacturing process, modifications to the equipment, changes of production facilities site, changes of suppliers). In the event that the repetition of the FAI covers only parts of the product/process, it is called “partial repetition“ of the FAI.
In any case, the FAI will have to be repeated in full after an interruption of production of two years, unless this deadline is not otherwise specified in the Purchase Order.

7.6.1 FAI execution method

The inspection takes place in the following stages:

a. verification of the identification of the product undergoing the FAI and its marking (by OTO MELARA personnel when required)
b. verification of compliance with the applicable configuration , verifying the correspondence with the last revision of the drawings/lists and applicable specification
c. review of any non-compliance recorded (if any);
d. verification of the qualification of special and critical processes (welding, gluing, crimping, painting, heat treatments, surface treatments) and the personnel involved
e. verification of NDT personnel qualifications
f. verification of the quality of the raw materials (certifications of the chemical and physical properties
g. verification of the validity of the production equipment for the first product
h. inspection of the manufacturing and control support documentation
i. verification of application of the Manufacturing and Control Plan (MCP)
j. verification that the requirements of the key characteristics are satisfied
k. verification of component trace ability
l. verification of the trace ability of certifications and NDTs
m. dimensional checks and visual inspections
n. function tests and related procedures
o. aesthetic finish
p. weighting
q. inspection of the packaging and preparation for despatch.

7.7 INSPECTIONS AND TESTS

7.7.1 Inspections and tests conducted by the Supplier

Inspections and tests shall be carried out according to standards and rules related to personnel safety.

The Supplier must perform and is responsible for all the tests and inspections specified in the contract documents and those ones developed by the Supplier (MCP) and previously approved by OTO MELARA sending to OTO MELARA the relevant certifications and test reports.

This is required regardless of whether OTO MELARA's or the Customer's personnel are present at the Supplier's facility.

Even when OTO MELARA and the Customer do not attend tests and inspections but accept the supply on the basis of presented documents, this does not relieve the Supplier from product liability or from complying with the contract specifications.

Inspections and tests performed by OTO MELARA and/or the Customer do not relieve the Supplier from its obligation to eliminate any defects or inconveniences found, in order to conform with contents of the subcontract documents.

The Supplier must guarantee the following in the conduction of tests and inspections:

a. the use of suitable and, where applicable, qualified personnel
b. the use of test instruments and equipment of a suitable type and class, submitted to periodical calibration in accordance with the applicable standards
c. the use of test methods approved by OTO MELARA.

The activities connected with development of the contract/order assigned to the Supplier and its Sub Suppliers may at any time be subject to conformity verifications and checks by

OTO MELARA and the Customer in order to prove compliance with all the contract specifications in terms of methods, procedures and documentation in general.

7.7.2 Inspections and tests at the Supplier's or its Sub Suppliers' / supervision by OTO MELARA and the Customer

The Supplier or its authorised Sub Suppliers must acknowledge that OTO MELARA and the Customer (**in general the Italian Ministry of Defence or those of foreign countries or the Italian MoD representing that of foreign countries with mutual government assistance)** have the right to conduct inspections at their production facilities provided that reasonable notice is given. Furthermore, at the Supplier's document approval stage (MCP) OTO MELARA and the Customer have declared their intention to attend certain tests or manufacturing activities, the Supplier must summon in writing (e.g. fax) Quality Control manager of the OTO MELARA production site involved with at least **10 working days'** notice.

The written call sent by the Supplier must contain the following details:

- a reference to OTO MELARA contract/order
- the test item and a description of the test
- reference to the documents (MCP) with phases indication:
    a. that require the binding presence of OTO MELARA Quality and possibly the Customer for the continuation of the activities (point H);
    b. which must be notified by a certain notice given to OTO MELARA Quality and eventually to the customer so that they may (at their discretion) be present (point W);
    c. in which it is required to issue a test report (point R).
- the quantity to be tested, the place of execution of the test, the date of the test, and its expected duration
- the Supplier's contact for reference purposes
- the contact's telephone numbers.

The Supplier or Sub-Supplier must provide all the necessary means and assistance to allow OTO MELARA and the Customer to operate at ease and under safe conditions.

If at the specified date the supply is not available for the envisaged tests and inspection, OTO MELARA reserves the right to charge the Supplier all costs incurred for travel and personnel. OTO MELARA may also charge the Supplier with personnel costs if tests are repeated in the case of retesting due to repeated non-conformities or defects occurring during the preparation and performance of the tests that are attributable to the Supplier, such as unsuitable instrumentation or test methods.

At the end of the tests, a report of the test results will be drawn up and countersigned by the Supplier and OTO MELARA's representative (and the Customer's representative, if envisaged).

A copy of the test report will physically accompany the product to identify its acceptability status during despatch to OTO MELARA (see for example the form in **attachment 1**).

The results of in-factory tests contribute to the Vendor Rating.

The Supplier is required to always ask OTO MELARA Quality for the authorization to send the products, even if OTO MELARA Quality does not do the testing at its workshops.

7.7.3 Government Surveillance

The Supplier undertakes the obligation to admit Government Quality Assurance Representatives for activities envisaged in AQAP/AER-Q standards that, for some programs, can be integrated with further requirements. For some contracts, when specified

in the Purchase Order, the Government Quality Assurance is carried out in accordance with STANAG 4107 (Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publications) and NATO AQAP-2070 (NATO Mutual Government Quality Assurance-GQA-Process).

7.7.4 Work Progress Monitoring

Supplier and its Sub-Suppliers shall make available all means and assistance so that the Organizations tasked by OTO MELARA can carry out the work progress monitoring, bearing in mind that the respect of the deliveries is monitored by the Materials Management, while the correct execution of the manufacturing and control phases is monitored by OTO MELARA Quality.
Consequently Materials Management is the interface with the Supplier for the possible supply of materials and equipment in manufacturing account, for the management of the product baseline (drawings, part lists and any requests for changes) and for all the logistic aspects of the shipment and delivery of the finished product. On the other hand, Quality is the interface with the Supplier for approval of construction documents prepared by the Supplier (plans and procedures) and for managing every quality aspect of the supply (including the management of any non-compliance and requests for deviation and/or waiver). Quality is also responsible for the final acceptance of delivery.
If the supply includes the design, the monitoring will be done by OTO MELARA Design Department.

7.7.5 Acceptance inspections and tests at OTO MELARA facilities

Stated the Supplier's responsibility for consigning conforming and already tested products (unless specified otherwise in the Purchase Order), OTO MELARA will perform the following inspections at its facilities on incoming goods (established according to supply criticality):

a. Packing requirement conformity
b. quantity correspondence
c. state of the goods supplied
d. compliance with the accompanying documentation
e. visual and technological tests (physical and chemical properties) where required
f. dimensional checks where required
g. function tests, where required.

7.7.5.1 Non conformity

A departure from a specified requirement for any characteristic and performance.
A classification of non-conformity is given in the following.

7.7.5.1.1 Critical Characteristic

A critical characteristic is defined as follows:

- a characteristic that judgment and experience indicate must be met to avoid hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product
- a characteristic that judgment and experience indicate must be met to assure performance of the tactical function of a major item such as a ship, aircraft, tank.

7.7.5.1.2 Major Characteristic[122]

A characteristic, other than critical, that must be met to avoid failure or material reduction of usability of the unit of product for intended purpose and the performance required.

7.7.5.1.3 Minor Characteristic

A characteristic, other than critical or major, whose departure from its specification requirement is not likely to reduce materially the usability of the unit of product for its intended purpose or whose departure from established standards has little bearing on the effective use or performance required of the unit.

7.7.5.2 Acceptance threshold

Critical or major non-conforming units will be rejected; if critical or major non-conforming units in a batch certified by the Supplier as conforming will be found in the sampling examination the entire batch will be rejected.

Furthermore OTO MELARA, in case of Minor nonconforming units, may return the entire supply lot to the Supplier if sample checks carried out according to the following table give negative results and charge the cost of the checks to the Supplier:
The following table gives a rough indication of the acceptance threshold related to lot, batch size, sampling, control level and criticality safety level. OTO MELARA has the right to issue tables dedicated to the specific supply.

NUMBER OF ITEMS/SERIES INCOMING LOT	NUMBER OF ITEMS/SERIES SAMPLE	CONTROL LEVEL					
		CRITICALITY LEVEL 1		CRITICALITY LEVEL 2		CRITICALITY LEVEL 3	
		Ac	Re	Ac	Re	Ac	Re
2 – 10	2	0	1	1	2	1	2
11 - 30	6	1	2	2	3	3	4
31 – 100	20	2	3	3	4	4	5
101 and over	30	3	4	4	5	5	6

Key to symbols:
Ac = Acceptance threshold: maximum number of acceptable minor non-conforming items per series for each incoming lot.
If the threshold is exceeded OTO MELARA will switch to reinforced sampling charging the Supplier with the relevant cost.
Re = Rejection threshold: maximum number of minor non-conforming items/series leading to rejection of the entire lot.

If non-conforming units are found in the course of the sample checks, but the products are required urgently for use or assembly, or to avoid production stoppages, OTO MELARA may, after having informed the Supplier, decide not to reject the lot or batch and make a selection to use the conforming products/materials if any (see paragraph 5.13); the cost will be charged to the Supplier.

This solution does not, however, relieve the Supplier from its liability in connection with completion of the non-conformity remedy procedure.

[122] As per MIL-STD-1916

OTO MELARA is entitled to reject non-conforming products or to ask for them to be repaired or reworked. Non-conforming products will be removed and, where possible, repaired or reworked promptly by the Supplier at its expense as soon as possible. Finally rejected products have not be resubmitted to OTO MELARA

The results of Inward Quality inspections contribute to the Vendor Rating.

7.7.6 Recording of activities on the documents

The Suppliers and Sub Suppliers are responsible for the performance and recording of all the tests and inspections defined in the documents requested by OTO MELARA. The document on which the tests and inspections are recorded must contain at least the following elements of definition:

a. Identification of the product subject to inspections and tests and its configuration (p/n, and s/n where required);
b. the types of tests/inspections conducted
c. a reference to the test method or the document followed for the activities
d. the test results
e. the instruments used, where applicable
f. the date of execution
g. the signature of the authorised persons

The defect repair or elimination data and the non-conformity reports must be recorded and remain at the Supplier's for consultation by OTO MELARA and/or the Customer.

7.8 TYPE TESTS

The Type Tests (of validation) characterise the item or device in a set environment or specific environments, such as:

a. the climate - heat, thermal shock, cold, ice, sand, wind, rain, relative humidity, etc.
b. the marine environment – waves, external pressure, etc.
c. the electromagnetic field – EMI, EMC, lightning, etc.
d. the vibrating environment – vibrations, shocks, etc.
e. fire resistance.

The test method is defined according to military and other standards, as specified in the general requirements for the product.

The tests required for product validation must be carried out on a representative sample only for the purposes of configuration and series production and only on that. Negative test results must trigger the design corrective action procedure or the performance of additional suitably documented tests.

The type tests must be defined in the quality plans, identifying those to be repeated periodically, in order to verify the preservation of the characteristics and performance of the production line.

7.9 MANAGEMENT OF NON-CONFORMITIES FOUND BY THE SUPPLIER

A non-conformity is any departure of a product from the requirements set out in the technical documentation referred to on the order/contract.

The Non-Conformity Report (NCR) is a document identifying and recording product non-conformities whose required quality evidence is indeterminate or unavailable or does not correspond to the applicable specifications or drawings referred to in the order.

For supplies that have been made according to the drawings and/or OTO MELARA specifications, i.e. for which the Design Authority is OTO MELARA (or in the case in which OTO MELARA represents the gateway to another Design Authority, as for products manufactured under license), the Contractor shall notify OTO MELARA Quality of any non-

compliance found on its supplies to OTO MELARA, in order to jointly assess the severity (major or minor) and the possibilities of acceptance.
For supplies that have been made according to drawings and/or specifications of the Supplier, i.e. for which the Design Authority is the Supplier, it must notify OTO MELARA about any non-compliance which has impact on fit, form, function, performance, safety and spare parts.
For the resolution of the non-compliance, the Supplier must submit to OTO MELARA Quality a reasoned request for acceptance in waiver or concession, containing at least:

- identification of the defective materials;
- description of the defects found or of the deviation;
- related causes;
- the proposed containment actions (repair/restoration of defective materials);
- the proposed corrective actions to prevent recurrence of the phenomenon.

This request, once approved by OTO MELARA Quality, shall be recorded on the Certificate of Conformity relating to the materials in question.

Supplies (single or batch) affected by major non-conformities will be rejected in their entirety. In the case of supplies with one or more minor non-conformities OTO MELARA will apply the criteria for acceptance or rejection as defined in paragraph 7.7.5.2.

Regular meetings will be conducted between the Supplier and OTO MELARA Quality to analyze the non-conformities recorded on the products involved in order to find out corrective actions with effective improvements.

7.10 MANAGEMENT OF NON-CONFORMITIES FOUND BY OTO MELARA IN THE PRODUCTS SUPPLIED

Non-conformities found by OTO MELARA:

a. at the Supplier's in the course of tests, inspections or audits
b. at the Sub Suppliers' involved by the Supplier in making the product
c. at OTO MELARA's facilities during receipt of the goods or installation
d. at other OTO MELARA Suppliers' to whom the Supplier has sent the product according to OTO MELARA instructions
e. at the Customer's for reasons due to the Supplier

will be classified by OTO MELARA in the NCRs, and communicated to the Supplier according to the following criteria:

- **NON-CONFORMITIES CLASSIFIED AS "REJECT"**
  OTO MELARA will return the product to the Supplier or prevent the delivery to its facilities.
- **NON-CONFORMITY CLASSIFIED AS "USE AS IS"**
  OTO MELARA will manage the relevant activities related to deviation/waiver requests.

In both cases, OTO MELARA's Administration, Finance and Control department upon the receipt of communication by the Procurement department will charge the Supplier for the expenses held for issuing and managing the Non-Conformity (including hours, materials and other technical costs).
The charged hours are determined on a objective basis and with a formal procedure.

- **NON-CONFORMITIES CLASSIFIED AS "REPAIR or REWORK"**
  If a non-conformity is found at Supplier's, it will be recorded and managed on site together with the Supplier according to applicable procedure (in case of deviation/waiver).

If a non-conformity is found during Inward quality inspection OTO MELARA will contact the Supplier to agree on the action the Supplier will take at the OTO MELARA facilities using the product. If the Supplier fails to take action within the agreed time, OTO MELARA will initiate the restore/repair procedure. OTO MELARA's Administration Finance and Control department, on the basis of Procurement Department communication, shall charge the Supplier the costs of the hours spent and the materials used to perform the repair or reworking activities and of the subsequent inspections (OTO MELARA's standard hourly charge for the current year will be applied).

If the Supplier intervenes at the OTO MELARA facilities, it may, in agreement with Operating Department (in compliance with production planning) and with reference to the quantity of non-conforming products, agree whether to:

1. repair or rework the product with its personnel at the OTO MELARA facilities or at its own premises
2. leave OTO MELARA repair or rework the product, in which case the Supplier will pay all the costs involved.

In case 1. The Supplier must ensure that OTO MELARA's time schedule is met, regardless of whether the product is replaced at OTO MELARA's facilities (in compliance with the rules for those working inside the factory) or on its own premises.

7.11 REWORK OR REPAIR ACTIVITIES RELATED TO NON CONFORMING PRODUCTS FOUND AT OTO MELARA's OR AT CUSTOMER's

7.11.1 Receipt

The Supplier must draw up a report on the state of any non-conforming materials/products returned by OTO MELARA. Materials/Products under warranty must be accompanied by the "Non-Conformity Report for Subcontracted Supplies". In other cases the Supplier must follow the instructions shown on the rework/repair order. Within its own factory, the Supplier must treat such products as if they were "materials supplied by OTO MELARA in subcontracting" and identify them as non-conforming units.

7.11.2 Ascertainment Record for materials belonging to the Customer under repair or servicing

In case the Supplier is requested to carry out servicing, repairs or updating materials belonging to OTO MELARA Customer, it shall issue an ascertainment record, signed by OTO MELARA charged personnel (and by the Customer when required), about the status of the materials at receipt. That record shall be filed and delivered to OTO MELARA together with test documentation.

7.11.3 Rework and Repair

Rework and repair activities, carried out in relationship to what indicated by OTO MELARA and what noticed by the Customer shall be duly documented. In case of product covered by warranty, the record shall be done on the "Defect Technical Analysis" form attached to "Non Conformity Report for Supplied items" the form shall be filled with the required indications:

a. defect cause an/or observations of the Non Conformity Report of OTO MELARA
b. corrective and containment actions to prevent the recurrence of the non conformity found.

Rework/repair operations must be performed (following the initial manufacturing/control cycle applied during production of the product in question) and the Quality Requirements in the original order must be applied. When the non-conformity can be resolved by means of “Standardised Repair Procedures”, they must be officially approved by OTO MELARA.
Note: In the aeronautical field, the Non-conformities reported must be treated as a Customer complaint. OTO MELARA expects immediate attention by the Supplier.

For defects/faults that occur on the products after delivery, the Supplier must ensure that:
- all components found to be defective are subject to a detailed process of investigation on the causes of the failure found;
- where the Product has not been returned, the Supplier must confirm that the drawings, the work cycles, the work orders, etc. have been reviewed in order to ensure that the defect found may not be repeated;
- upon receipt of a "Report of Non-Conformity"/"Repair Order" it must acknowledge receipt confirming that, as containment measures, all stocks have been checked and cleared from the defect recorded;
- where a failure survey report is required, the report must be submitted within 30 working days, or within 10 days if it concerns safety, from the receipt of the rejected Product, the report must contain in detail:
    - the containment action necessary to prevent that potentially defective products belonging to the same batch or manufactured with the same tools and methods are used, extending to check out any inventory stored in OTO MELARA or at the Supplier, in order to exclude the possibility that they are affected by the same defect.
    - The corrective action to prevent the repetition of the product failure.

7.11.4 Testing

For each reworked/repaired product, the Supplier must perform the scheduled tests according to the procedures provided or drawn up by OTO MELARA and approved by OTO MELARA Quality. Objective evidence of these activities must be presented.
OTO MELARA Quality, and the Customer, if necessary, has the right to attend the tests. The presentation to the tests must be effected as described on the initial order pertaining to the consignment.

7.11.5 Documentation required

The materials supplied must be accompanied by the following documentation:

a. Ascertainment report, (which can be supplemented with the Failure Analysis form for materials/products under warranty)
b. The original Failure Analysis form completed in full to certify the rework/repair, detailing any corrective actions performed to prevent any recurrence of the non-conformity
c. the original test reports for the tests and inspections performed and their findings
d. other certificates referred to in the specific repair/rework order (if issued)
e. certificates required by OTO MELARA specifications for special processes, when applied
f. the rework/repair certificate.

If the certificates listed are not attached to the packing-list, the supply may not be accepted, in which case it will be returned and the costs will be charged to the Supplier.

The Supplier must procure, at its own expense, any subassemblies, components and materials required for the rework/repair activities and to preserve the documentation for at least **10 years** from the date of delivery, unless otherwise indicated in the purchase order..

N.B. The rework/repair certificate must quote all the references of the order and the "Non-Conformity Report for Subcontracted Supplies" and show at least the following declaration of conformity: "It is hereby certified that the goods supplied have been reworked/repaired and comply with the specifications, the drawings and the order to which they refer, with the exception of the attached deviations, and they have been inspected and tested according to the terms and conditions and requirements stated in the initial order (no. …) or the specific order (no. …)."

7.11.6 Notification of non-compliance related to products delivered - Quality Alert

The Supplier must send a statement of "Quality Alert" (written on its headed paper) to notify OTO MELARA about any circumstances that may affect the integrity of the product previously delivered or any errors or lack of Use and Maintenance Manuals that may affect the use and/or maintenance of the product.
The information must be sent to OTO MELARA, more specifically to:
- Head of Design;
- Head of Customer Logistics;
- Quality Manager.

7.12 LIABILITY FOR SUB SUPPLIERS MANAGEMENT

If the Supplier delegates certain activities to Sub Suppliers, it must guarantee:

a. the Sub Supplier's skill and capability to develop the assigned part of the contract
b. the correct and complete transfer of all OTO MELARA's specifications applicable to the Sub Supplier by means of this document.

OTO MELARA will in all cases consider the Supplier responsible for poor quality or any delays in the supply (including the documentation) and reserves the right to apply to the Supplier the penalties established in the Contract or Purchase Order.
The Sub Suppliers must also guarantee control of the materials and of the equipment supplied to them under subcontract.

7.13 LIABILITY FOR SUBCONTRACTED WORK (MATERIAL BELONGING TO OTO MELARA OR THE END CUSTOMER)

The Supplier may receive materials or equipment for subcontracted work in either of two ways:

- from OTO MELARA itself
- from OTO MELARA's Suppliers.

In both cases, the Supplier is responsible for ensuring the products received correspond, qualitatively and quantitatively, to the items listed in the accompanying documents and must inform OTO MELARA of any discrepancies, shortfalls or damage.
The Supplier must report promptly to OTO MELARA Materials Management any problems in assembling or using the product received, specifying the following:

a. the name of the Supplier or OTO MELARA facility that sent the product
b. the number of the transport document accompanying the product
c. the quantity affected by the problem found
d. a description of the problem found
e. possible corrective action to be taken.

OTO MELARA agrees to provide precise indications of what has to be done with the material within **3 working days** from the report.

Subcontracted material supplied by OTO MELARA must be identified as such during the storage stage and when it starts being worked (it must be identified with the associated withdrawal order from the store). The same identification shall be maintained if the material is dispatched to Sub Suppliers.

OTO MELARA reserves the right to apply a penalty if:

1. the Supplier does not inform it promptly of any assembly or processing problems connected with the product delivered
2. The Supplier does not promptly report damage or quantity discrepancies between the product delivered and the delivery note.

In case 2: Administration Finance and Control department, shall charge the Supplier the costs of the hours spent performing the repair or reworking activities and of the subsequent inspections.

7.14 ACCESS TO THE PREMISES AND DOCUMENTATION OF OTO MELARA'S SUPPLIERS AND SUBSUPPLIERS

See also Inspections and tests at the Supplier's or its Sub Suppliers' ….

OTO MELARA, its Customer and their designated representatives will be entitled to carry out at the Supplier's main facility and operating units all the tests and inspections considered necessary to ascertain whether the supply and documentation comply with contract conditions, and to perform audits of the system and/or operating process.

The Supplier and its Sub-Suppliers must provide OTO MELARA, the Customer and their representatives, the structures and personnel necessary to carry out the tests and inspections.

7.15 SPARE PARTS

7.15.1 Spare parts for technical support to validation tests

The Supplier must guarantee the availability of the spare parts required to support all the activities envisaged, from testing and commissioning of the first sample (or prototype) made up until achievement of the performance targets, including the warranty period for the entire consignment.

The list of spare parts must be previously agreed with OTO MELARA and drawn up by the Supplier prior to the first consignment. The list may be modified to meet the specific requirements of OTO MELARA and its Customer. While this is being done, the Supplier must provide spare parts through the establishment of appropriate on-site stocks, which will be managed by OTO MELARA but remain the property of the Supplier. These spare parts must be returned to the Supplier on termination of the contract, during testing, commissioning, the warranty period and the performance target verification period.

In the event of malfunctions, defects and/or poor quality verified by OTO MELARA and/or the Customer, OTO MELARA will inform the Supplier when it is necessary to intervene to replace a part.

If the Supplier is not available to perform the work in the time allowed, OTO MELARA will replace and/or repair the part itself, when possible, or have the work done by someone else.

Intervention by OTO MELARA or any third parties will not affect the Supplier's product warranty.

The faulty part if still covered by guarantee will be sent to the Supplier at its expense. The Supplier must produce a thorough Failure Analysis detailing the type of failure and the possible causes.
On completion of the repair work or the analysis, the Supplier must return the part to OTO MELARA free of charge.

7.15.2 Spare parts included in the supply and/or in stock

The Supplier must provide a list agreed with the OTO MELARA Logistic Business Line drawn up to meet OTO MELARA's and the Customer's needs and make spare parts available for a period of time equivalent to the estimated life of the product, when not specified otherwise by laws and/or sector regulations.
The spare parts list shall include:

1. spare parts relevant to assemblies/subassemblies designed by OTO MELARA
   - Part Number
   - Weight and dimensions
   - Price.
2. spare parts relevant to assemblies/subassemblies designed by OTO MELARA derived by a logistic analysis carried out by the Supplier
   - OTO MELARA Part Number
   - Closest assembly (NHA)
   - Description (spare identifying title)
   - Code of the spare referred to type and use
   - Criticality code of the system related to failure of the item considered
   - Repair code (if can be repaired or not)
   - Quantity for nearest assembly
   - Spare total quantity in the system
   - Reliability datum (MTBF)
   - Expected life (for wearable parts)
   - Shelf life
   - Lot (minimum deliverable quantity)
   - Dimensions (length, width, height)
   - Weight
   - PLT (delivery time)
   - SMR CODE (code relevant to procurement type, substitution levels and repair of the spare)
   - Economic quotation of the spare
   - Indication of useful tooling for maintenance and relevant logistic information
   - Economic quotation of tooling mentioned in previous point.

3. spare parts relevant to assemblies/subassemblies designed by the Supplier
   - OTO MELARA Part Number if assigned
   - Manufacturer Part Number
   - Closest assembly (NHA)
   - FSCM (spare manufacturer NATO code)
   - Description (spare identifying title)
   - Code of the spare referred to type and use
   - System criticality code related to failure of the item considered
   - Repair code (if can be repaired or not)
   - Quantity for nearest assembly
   - Spare total quantity in the system
   - Reliability datum (MTBF)

- Expected life (for wearable parts)
- Shelf life
- Lot (minimum deliverable quantity)
- Dimensions (length, width, height)
- Weight
- PLT (delivery time)
- SMR CODE (code relevant to procurement type, substitution levels and repair of the spare)
- Economic quotation of the spare
- Indication of useful tooling for maintenance and relevant logistic information
- Economic quotation of tooling mentioned in previous point.

8 MANAGEMENT OF CONTRACT DOCUMENTATION AND DOCUMENTATION REQUIRED BY OTO MELARA

The drawings, the Quality Plans, the Manufacturing and Control plans, the Technical Specifications and any other documentation sent by the Supplier must be at least in the Italian language, and in any other language specified on the Order.
Printed documents must be delivered in reproducible form and that can be scanned.
If the required documentation is not delivered, payment of the related invoices may be withheld.
Delivery of documents may be binding for payment of invoices relevant to various deliveries.
If any of the test documents/certificates (type, weight, chemical and physical properties, visual inspections and dimensional checks) are not presented, OTO MELARA reserves the exclusive right to decide whether to perform the tests itself or have them done by an independent body, and the Supplier will be charged the costs sustained and damages for the delay.
For all painted components for which OTO MELARA does not provide painting specifications, regardless of the criticality level, the Supplier must present the painting process in advance, including the technical specifications of the products and the thickness of the coats applied, together with the Manufacturing and Control Plan, if there is one, or the Conformity Certificate.
The documentation covering:

a. Qualification of the welders
b. Qualification of the welding procedures
c. Qualification of the operators for Non-Destructive Test;
d. Qualification of Special processes.

must be delivered to OTO MELARA Quality (for verification and approval) only prior to arrival of the first lot referring to the same Order and the same job order, in the absence of events modifying the application of the documents; that documentation must be kept up to date for the entire duration of the supply and thereafter to keep the Supplier List updated.
The documentation on Non-Destructive Tests must be consigned together with the test items.
When the contents of the typical Manufacturing and Control Plan have been approved by OTO MELARA (see typical Manufacturing and Control Plan) , this document must be used by the Supplier for all deliveries, compiled for each manufacturing lot and a copy sent to OTO MELARA together with the envisaged test reports.

If agreed in advance with the Quality Control of OTO MELARA production site involved, the Supplier may, following approval of the typical MCP and in partial or total replacement of the personalised MCP, present a List of Tests and Inspections

for each supply, as an abstract of the MCP approved and expressed merely as a sequence of the scheduled test and inspection activities.

On the Conformity Certificate the Supplier must specify the size of the Manufacturing lot delivered, even when it does not cover the entire quantity specified on the Order. The product serial number and/or the lot number must also be specified.

Manufacturing may not commence until the Manufacturing Control Plan (and the Quality Plan and the Configuration Management Plan when required) has been approved.
If these plans have been sent by the Supplier but not yet formally approved by OTO MELARA Quality, the Supplier must formally ask OTO MELARA Quality for the authorization to proceed.

8.1 SECURITY OBLIGATIONS (CONFIDENTIALITY)

The Supplier must take all the necessary precautions to prevent divulgation and improper use of documentation belonging to OTO MELARA.
All the documents used must be considered confidential, unless otherwise classified. OTO MELARA's property rights must be protected.

8.2 DOSSIER OF THE CONTRACT REQUIREMENTS AND RELEVANT CONFIGURATION MANAGEMENT

When the negotiations have been completed and the order confirmation issued, the Supplier must prepare and keep a dossier containing the following documents:

a. the order
b. the order confirmation
c. any changes to the order
d. the specific technical documentation referred to in the order (drawings, specifications, standards) and/or references to the documentation classified and kept according to the applicable rules
e. a list of the applicable documents with their revisions and proof of controlled distribution (within the Supplier's own organisation and at the Sub-Suppliers' see for example **attachment 2**)
f. a copy of the latest revision of this document, with proof of transmission to any Sub-Suppliers
g. any dedicated technical documentation
h. documentation of non-conformities found by OTO MELARA in the course of acceptance tests and inspections (at the Supplier's and OTO MELARA), with the analysis report and a plan of corrective/preventive actions and improvements.

All these documents must be kept up to date by an internal focal point formally designated and presented to OTO MELARA inspectors when requested. If the documentation is not made available, OTO MELARA personnel may decide not to accept the product/material.

8.3 REQUESTS FOR MODIFICATION TO TECHNICAL DESIGN DOCUMENTATION

8.3.1 Products made by the Supplier based on technical documentation supplied by OTO MELARA

The Supplier must strictly adhere to the technical documentation supplied by OTO MELARA and is entitled to propose updates (design modifications) in order to improve the final quality and feasibility of the product, and to achieve cost reduction. Proposal must be

submitted in writing to the OTO MELARA department involved (see OTO MELARA-Supplier documentation interface matrix).
OTO MELARA will inform the Supplier whether the proposal is accepted or not (after internal processing by the entitled departments).
If the proposal is accepted, OTO MELARA will send the Supplier the revised technical documentation with indication of introduction point.
The Supplier shall update the dossier of contractual requisites, record the introduction point agreed and the physical introduction of the modification (see example at **attachment 2**). Actions taken by the Supplier in the absence of official OTO MELARA documentation will not be acknowledged and the product will be rejected and all resulting costs charged to the Supplier.

8.3.2 Products designed by the Supplier to OTO MELARA specifications

In agreement with OTO MELARA (see the design section herein entitled PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS), the Supplier may define a frozen design configuration (Baseline) and send OTO MELARA a list of technical documents applying to that part of the design.
From this moment on, all design modifications must be handled in accordance with the subsection entitled Products made by the Supplier based on technical documentation supplied by OTO MELARA .
OTO MELARA will inform the Supplier of the modification coding method to allow introduction and configuration of the modification.

8.4 QUALITY PLAN

The Quality Plan, for the format and content of which it is recommended to make reference to the ISO 10005 and AQAP 2105 standards (AER-Q-140 in the case of supplies under the AER-Q standard), is the document in which the Supplier describes the organisation, the operating and technical methods used and the stages in which it intends to develop the supply products in accordance with the requirements defined in the purchase contract issued by OTO MELARA and in the documentation referred to therein, by the AQAP/ISO regulations applicable and by its own Quality System. This document issued in Italian (unless otherwise provided for by the Purchase Order), must be signed by the Supplier's Quality Manager and submitted to OTO MELARA Quality for verification and approval within **60 calendar days** of the acceptance of the Order and prior to commencement of the work. If the Supplier fails to submit the documents in time, OTO MELARA is entitled to reject the supply.
The document also describes the methods for managing relations with OTO MELARA and lists the names of the people with specific responsibilities in the development and control of the supply.
For the entire duration of the supply, the Quality Plan must be kept up to date and submitted to OTO MELARA from time to time for verification and approval.

The Quality Plan must always include the Manufacturing and Control Plan, and the Configuration Management Plan if there is one.
The Supplier's Quality function must perform audits to verify implementation of the Quality Plan and the any other documents envisaged (Manufacturing and Control Plan and the Configuration Management Plan).
The Quality Plan shall also give objective evidence about the risk planning, including the identification, analysis, check and mitigation.

8.5 CONFIGURATION MANAGEMENT PLAN

Configuration Management activities must be carried out in accordance with the requirements of applicable NATO standards **AQAP-2110 / AQAP-2120 / AQAP-2130 / AQAP-2210**.

Unless explicitly stated on the Order, the Supplier may associate the Configuration Management Plan with the Quality Plan to be submitted to OTO MELARA for approval within **60 calendar days** of the acceptance of the Order, and prior to commencement of the activities. This Plan must set out the procedure governing the flow of information between the Supplier and OTO MELARA and **develop the following requirements in particular** (applicable according to the type of supply): Identification of the Configuration, Configuration Control, Configuration Status Accounting, Configuration Audit.

The following must also be described (depending on the applicable AQAP standard):

a. the criteria for selecting Configured Articles (only if AQAP 2110 is applied)
b. the methods for identifying the technical documentation (drawings, lists) and the Items (only if AQAP 2110 is applied)
c. the methods for issuing and managing Baselines (only if AQAP 2110 is applied)
d. the methods for classifying modifications and waivers/deviations
e. the methods of sending major modifications and waivers/deviations to OTO MELARA for approval
f. The methods of sending minor modifications and waivers/deviations to OTO MELARA for verification of their correct classification.

8.6 MANUFACTURING AND CONTROL PLAN (MCP)

The Manufacturing and Control Plan is the document with which the Supplier plans the production process, identifies the tests and inspections to perform and details the methods and the acceptance criteria. This document must be approved preliminarily by OTO MELARA and the binding points requiring attendance by OTO MELARA's and/or the Customer's personnel must be identified. The MCP must, where applicable:

a. contain elements identifying the document, the number, the subject, the dates of issue and revision, details of the product to which it refers, and approvals
b. list in sequence the macro-stages of manufacture and control and show references to the related documents (drawings, technical specifications, procedures, work cycles, control cycles, WPSs, defined as manufacturing dossiers)
c. clear indication of those phases/operations intended to be assigned to sub Suppliers and their certification level (with the evidence of the relevant control)
d. list the tests and certifications specified in the applicable technical documents
e. contain adequate certification concerning visual/functional inspection and dimensional checks;
f. indicate the persons responsible for performing the various stages of control and self-checking
g. specify the sampling plan
h. show, for each stage, the spaces that can be used by the Supplier, by OTO MELARA and by the Customer to indicate their own binding points and/or notification points
i. show the Witness Points called W POINTS (a witness point is a stage of activity of which OTO MELARA must be informed at a set time in advance)
j. show the Binding Points called H POINTS (a binding point is a stage of activity requiring the presence of OTO MELARA)
k. show the Report Points called R POINTS (a report point is a stage of activity requiring the issuing of a test report).

See for example what reported in attachment 3.

8.6.1 Visual/Dimensional inspection Certificate

The certificate, form or report shall attest the positive outcome of visual and dimensional inspection and list the results of check of those key characteristics agreed with OTO MELARA and reported in MCP for item/product acceptance.
For aeronautical products subjected to FAI what is reported in the dedicated paragraph applies.
Characteristics are:

- Dimensions reported in the drawing
- Drawing notes referring to the material that constitutes the part
- Drawing notes describing heat and surface treatments or other parameters (i.e. tightening torques etc.).

If detailed indication are not available the criterion for determining the dimensions to be recorded is the following:
in case NC machines are used for production of that part the lot produced can be considered as follows:

Characteristic	First part	other parts of the lot
"machine obtained dimension[123]"	To be recorded in the form or certificate	Last part and some intermediate pieces To be recorded in the form or certificate
"Operator responsibility dimension[124]"	To be recorded in the form or certificate	Show, in the form or certificate, the results of the checks carried out on all the products manufactured

In case the machine does not give confidence in dimension repeatability key dimensions shall be checked for all machined parts
Note: if the last piece checked is out of tolerance, it is necessary to check all the pieces produced from the last inspection with positive result.
The certificate shall report at least:

- Supplier's logo or name
- Part Number
- Part serial Number
- Reference to NC machine part program (when applicable)
- Identification of the characteristic on the drawing
- characteristic, nominal dimension and relevant tolerance
- measured value
- instruments used with indication of calibration expiry date (see also paragraph: TEST AND PROCESSING INSTRUMENTS/EQUIPMENT)
- applied process (i.e.: heat, surface treatment,NDT etc.)
- acceptance
- responsible signature

123 "Machine obtained dimension": dimension obtained through machine precision and repeatability i.e. the distance between two holes, a profile etc. it is acceptable that the dimensions is verified on the first part machined as validation of NC part program;

124 "Operator responsibility dimension": dimension obtained through the skill of the operator, operator responsibility dimension (i.e diameter of a tolerate hole which depends on tool setting or sharpening) shall be checked for each part machined.

8.6.2 "Typical" Manufacturing and Control Plan

See also MANAGEMENT OF CONTRACT DOCUMENTATION AND DOCUMENTATION REQUIRED BY OTO MELARA. "Typical MCP" means a plan with characteristics under subsection see MANUFACTURING AND CONTROL PLAN (MCP).
That is typical for a certain supply or recurrent in several lots of supply; this document can be used, following an agreement with OTO MELARA Quality at the preliminary supply definition stage, in replacement of the personalised MCP (called in short as MCP) for the specific supply after its complete definition.

8.6.3 Check stamps

The Inspection and Production Stamps issued to authorized holders, must be recorded with the sample signature of the holder, and with the definition of the approval purpose for which the stamp must be used.
If the stamp is withheld for any reason, it must not be released again for at least six months and the reason of the withholding must be documented.
If the stamp is lost this will require the withdrawal of the remaining stamps that bear the same identification for at least one year. An illegible stamp must be replaced.

8.7 DOCUMENTATION RELEVANT TO ITEM WITH CRITICALITY LEVEL 1

If the supply comprises components identified as safety critical, in addiction to what has been envisaged, the Supplier agrees to:

a. maintain for at least **15 years** from the end production date (referred to the product where the component is present) the orders and relevant variants, all documentation dealing with safety characteristics test performed, modification required to the product or to the manufacturing process; manufacturing defects, test results. All the above also in case of ceasing the supply to OTO MELARA
b. deliver for each supply documents certifying material characteristics and controls relevant to the envisaged safety characteristics
c. point out promptly to OTO MELARA Quality any possible safety characteristic failure
d. point out to OTO MELARA Material Management change proposals relevant to items, components, materials or manufacturing or control process
e. record on manufactured products the Supplier name or identification code, the date or code of manufacturing. Manufacturing date shall indicate manufacturing month and year or the batch if several batches are produced monthly
f. be available for OTO MELARA inspections related to organisation effectiveness for what relates safety products..
g. make sub-Suppliers officially informed about OTO MELARA's present quality requirements
h. make available to OTO MELARA all documents related to safety components in case of ceasing activity.

For what relates to products developed by the Supplier refer to PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS.

8.8 TECHNICAL CHARTS FOR NON-METALLIC MATERIALS AND CHEMICALS

The technical charts show the specifications of non-metallic materials and chemicals used in the supply.
The list of substances contained in the chart must cover at least the following:

a. painting products (paints, solvents, diluents, catalysers, fillers, etc.)
b. cleaning products (soaps, acids/alkalis, detergents, etc.)

c. adhesives and sealants (adhesives, putties, sealants, adhesion enhancers, etc.)
d. lubricants (oil, grease, cleaners)
e. welding materials (electrodes, welding wires, deoxidizing pastes, sealing compounds, insulation compounds, anti-adhesives, etc.)
f. composite materials
g. resins of various types
h. thermal and acoustic insulation, fire-retardant and self-extinguishing materials, etc.
i. special metal plates
j. technical gases
k. grinding products (metal or non-metal sand-blasting shot and cut wire, fluid lubricants and coolants, penetrating liquids, fuel oil)
l. products for purification systems (acids, alkali, etc.)
m. coolants
n. fire-extinguishing products (foam, dust, etc.)

these charts shall be delivered to OTO MELARA Materials Management together with the first supply.

Moreover, in accordance with the standard EC 1907/2006, the Supplier is required to provide the identification codes for the products/materials supplied containing dangerous substances under the standard REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) and the related safety data sheets.

8.9 SAFETY DATA CHARTS

These charts are used to reduce the risk of on job accidents when handling and servicing materials or products; they shall be delivered to OTO MELARA Materials Management together with the first supply.

They shall contain and comply with applicable law requirement.

The information recorded on the charts must be entered clearly and concisely for easy consultation. Additional information may be required for special compounds, whereas for others this information may not be necessary or technically impossible to find; in any case this must be justified. Any changes made to the safety data chart must be communicated to the recipient of the document. The list of materials for which the chart is required must include consumables or maintenance and cleaning products. The sequence of the topics to include in the safety data chart is specified below:

IDENTIFICATION OF THE PRODUCT AND MANUFACTURER

a. composition/information on the ingredients

IDENTIFICATION OF HAZARDS

b. first-aid measures
c. fire-preventing measures
d. measures envisaged in the case of accidental leakage
e. handling precautions
f. exposure / individual protection
g. physical and chemical properties
h. stability and reactivity
i. toxicological information
j. ecological information
k. disposal conditions
l. information on transportation
m. other information

The data must be shown on the label in compliance with the rules on classification, packing and labelling of hazardous products.

8.10 CERTIFICATION OF CONFORMITY TO OTO MELARA PURCHASE ORDER

The aim of the Certificate of Conformity is to state, under the direct and exclusive legal liability of the Supplier, that the supply complies with the technical and regulatory requirements specified in the purchase order and in the documentation referred to therein.

The statement must be undersigned by the Supplier's legal representative or someone else belonging to the Supplier's organisation who has specific powers for the purpose (Quality Manager).

The Certificate of Conformity must contain at least the following elements:

a. Supplier's company name
b. address of the manufacturer's plant
c. reference to the OTO MELARA's purchase order and following modifications
d. order issuing date
e. definition of the type of product supplied
f. quantity of products covered by the declaration
g. identification of the manufacturing lot and, if applicable, the serial number (in sequence) attributed to individual end products to which the declaration refers
h. assembly drawing and relevant list (or parts list) with revision index, products ID;
i. elements required to define the product configuration status compared to the documents approved, with an indication of the release of the software installed
j. reference to the Quality Plan (where applicable), identified through the code and revision index
k. reference to the adopted Manufacturing Plan and Control (where applicable), identified through the code and revision index
l. non conformities related to the delivered product which agreed solution has been "use as is" or "repair" and consequently managed as "deviation/authorization"
m. references to the list of missing parts, if any, compared to the end product configuration
n. reference to FAI Report (as far as applicable), properly identified by means of "identification number" and "date";
o. certificate issuing date
p. signature of the authorised representative of the company
q. Declaration of Conformity: "It is hereby certified that the supply complies with the specifications, drawings and order to which it refers, except for the attached deviations, and that it has been inspected and tested according to the provisions and the order requirements"
r. Signature by the Government Surveillance in the cases provided and of the relevant sections of the Certificate of Conformity drawn up according to the contents of STANAG 4107; Certificate of Conformity in accordance with Annex B of AQAP-2070.

Note 1: The Supplier is recommended to use as standard for its Certificate of Conformity the form reported as **attachment 4** or the one envisaged in AQAP-2070 (which is mandatory when the Government Surveillance is applied under STANAG 4107).

8.11 FILING AND CONTROL OF THE DOCUMENTS RECORDING THE SUPPLIER'S ACTIVITIES

Documents recording the Supplier's activities must be kept available for OTO MELARA and/or its Customer **for at least 10 years**, unless specified otherwise in the contract.
In case of item with **criticality level 1** the relevant documentation shall remain available for **at least 15 years**.

OTO MELARA may ask for the documentation and certification to be sent to it at no extra cost.
If Quality/Assurance/Control documents or certifications are valid for or applied to more than one product, including ones of different type, the Supplier may only file them among its quality records for the first item by type of product.
It is necessary to use safe storage places for the documentation, to prevent deterioration and ensure traceability, such as, for example, fire resistant drawers, duplicate copies kept in other places.
All data stored by electronic means must be stored on reliable and safe support, regularly duplicated and checked for integrity.
Suppliers equipped with a computer system for documentation storage must have a procedure to recover the data, ready for application in the event of disasters; this must be defined, documented, implemented and regularly inspected for compliance.
In case of insolvency of the Supplier, he/she is required to deliver all relevant records to OTO MELARA.

9 PACKING AND SHIPMENT

9.1 APPLICABILITY

The provisions covered by this subsection are applicable, unless otherwise indicated in the order, to all **outsourced raw** materials, **semi-finished products and end products made to drawing and purchased from the trade** (hereinafter simply referred to as materials) used for production and as spare parts.
The following provisions indicate the **minimum requirements** for packaging the supplies and if the packaging would be incomplete or insufficient, **it is the Supplier's job** to adopt the most appropriate solutions to avoid inconveniences, in order to prevent the risk of deterioration or damage of supplies.
If these requirements are not complied with, the materials supplied will not be accepted by OTO MELARA Quality; any costs incurred for the protection of materials will be charged to the Supplier (Reporting through the Non-Conformity Report for Subcontracted Supplies and Debit Note by Administration, Finance and Control).

9.2 LOGISTIC PACKING REQUIREMENTS

The materials must be packed in such a way as to preserve their integrity throughout all the logistic stages and warehousing, and to facilitate handling, storage and identification.

9.3 GENERAL REQUIREMENTS

These requirements always apply with the deviations and specific instructions shown under the subsection entitled "Special Requirements".

9.3.1 Individual packaging

All the materials must be **packaged individually** as follows:

a. Material: polyethylene
b. Shape: bubbles or foam
c. Packaging: bag or suitable wrapping.

9.3.2 Transport packing

After individual packaging, the material must be placed inside or on a transport container of adequate size and strength, to be chosen depending on the weight and the shape of the cargo from the following types:

a. transport packing to the Supplier's drawing
b. wooden crates
c. cardboard boxes
d. pallets

The containers do not need to be brand-new, however, they must not show any damage that might affect their integrity. For tracking purposes, it is advisable to mark them with the name of the sender.

Whatever the solution adopted, if the pack exceeds the maximum weight of **20 kg**, it must be provided with the **suitable interface** (wooden supporting pallets or the like) to allow **transport using a fork lift truck**.
The material must not project from the external shape of the container which, in turn must be free of any nails, chips or anything else that may cause harm to operators or jeopardize their safety.
Moreover, inside/on the transport container, **the material must be held in place** using special devices that prevent the load from moving, without damaging it. Such devices must be chosen according to the weight and shape of the load, and these can be:

a. supporting saddles
b. rubber foam/plastic material templates
c. polystyrene foam or particles
d. straps/flexible films

If a single final transport container is used to transport different materials, it is necessary to provide as many appropriate **intermediate containers** as the types of materials loaded, in compliance with the requirements specified above.
Moreover, if the supply includes a kit made of partially pre-assembled parts, an **individual transport container** must be provided for **each kit.**

9.3.3 Identification

When delivered to OTO MELARA, all the materials must be properly identified, with the markings, stampings, labels, tags and shipping documents, showing the following details:

a. Supplier's company name
b. OTO MELARA Purchase Order number / reference and any other Variants
c. item number of the Purchase Order
d. OTO MELARA Code / Part Number (obtainable from the order)
e. serial number / lot number or date of manufacture
f. description of the component
g. quantity

For the products subject to expiry, the relevant validity date must be recorded in particular for products made of elastomers the polymerisation data shall be reported (see OTO MELARA procedure OTO-GO-00).
The requirements specified in this subsection do not apply to catalogue products with the Supplier's own marking/coding.
This identification must be applied outside the intermediate/final transport containers.
A clear plastic envelope containing a copy of the shipping documents and required certifications is affixed on one of the external surfaces of the final container.

9.4 SPECIAL REQUIREMENTS

In the specific cases mentioned below, the following special provisions shall apply:

9.4.1 Small size parts to drawing

a) For small parts **weighing less than 0.1 kg** each, clear polyethylene bags can be used (thickness ≥ 0.2 mm)
b) for small **unpainted parts without deteriorating worked surfaces,** multiple packing in a single polyethylene bag, of the bubble or foam type, can be used up to a total weight of 0.5 kg.

9.4.2 Blanks

Except for micro-castings, no individual packaging is required for metal plates, rods, extruded items, castings or forgings.
The required protection can be obtained with the transport container.

9.4.3 Mechanical standardised parts (screws, nuts, washers, etc.)

Multiple packaging in an individual clear polyethylene bag (thickness ≥ 0.2 mm) weighting maximum 3 Kg.

9.4.4 Hydraulic-pneumatic materials

a) All the openings in the hydraulic components (motors/pumps, valves, drawers, rigid/ hose pipes, fittings, etc.) must be protected with plastic plugs of a suitable size; alternative solutions are not allowed

b) rigid/hose pipes can be packed directly in / on the transport container, with a package that **differs for each type of pipe**; individual packing is also required in the case of painted rigid pipes

c) the hose pipes can be rolled up provided that the bending ray is not less than the minimum ray specified in the catalogue

d) the packing of rubber pipes must be provided with an identification card showing the pipe polymerisation/vulcanisation date, as well as the date of assembly of the fittings to the pipe (materials with a limited life)

e) on rubber pipes, even if in absence of packing, the identification number shall be applied.

9.4.5 Electric/Electronic Materials

a) For electric/electronic normalised items, multiple packaging is allowed provided that the compliance to the requirements under subsection LOGISTIC PACKING REQUIREMENTS are met

b) The connectors of the equipment and cables must be protected with plugs provided or, if not provided, by plastic plugs of a suitable size. No alternative solutions are allowed

c) The materials sensitive to electrostatic discharge must be kept and delivered in suitably-identified protective packaging, in accordance with the provisions of the OTO MELARA's Manufacturing Procedure **PF-040-22**

d) Inertial materials (gyroscopic platforms and gyroscopes) must be kept and delivered in suitably-identified protective packages, equipped with suitable shock detectors.

9.4.6 Generic elastomers

These are the materials used, totally or partially, as elastomers except for hose pipes.

a) All the packages must be accompanied with an identification tag showing the polymerisation/vulcanisation date (materials with a limited life), following the instructions of procedure **OTO-GO-00**

b) The packages used for rubber gaskets must protect the contents from the sun and ultraviolet rays and from fluids (oils, fuels, water, etc.)

c) Multiple packaging is allowed with the following limitations:

- the parts must have the same drawing number and polymerisation/vulcanisation date
- the internal diameter must be ≤ 400 mm and development ≤ 1600 mm
- each package must not contain more than 20 pieces and weigh more than 100 kg
- Each part shall be individually packed.

9.4.7 Trade materials

Standard packaging is allowed, provided that the requirements under subsection LOGISTIC PACKING REQUIREMENTS are met.

9.4.8 Ferrous end products without any protective surface treatment

Besides meeting the requirements under subsections APPLICABILITY, LOGISTIC PACKING REQUIREMENTS, GENERAL REQUIREMENTS for these materials a protective treatment with Tectyl 900 (Valvoline Oil Company) must be provided in compliance with General Requirements.

9.4.9 Material despatched directly to an other Supplier of OTO MELARA

If the Supplier is requested to send the product to another OTO MELARA's Supplier, it shall keep to the above packing and shipping instructions for the product (which shall be identified as accepted) and shall send OTO MELARA Materials Management and Quality the following documents:

a. a copy of the shipping document
b. the Certification required (that shall not be sent to OTO MELARA's Supplier)
c. the Certificate of Conformity signed by the Quality Manager or his/her authorised representative (a copy must also be sent to the Supplier of the following activities, together with the materials/products).

If any of the above documents is missing, this will prevent OTO MELARA from performing the inward quality control and thus paying the invoices. The absence of the certification, any mismatching of the certifying document with the product, values that are incomplete or differing from the expected ones cause the issue of Non-Conformity Reports and thus the suspension of the payment of the invoices.

10 EQUIPMENT DESIGNED BY THE SUPPLIER

This chapter supplements the requirements set out previously. For further details, reference must be made to subsection APPLICABILITY.
The term equipment means any item necessary to support the manufacturing / control / logistic support process.
The present document cannot be alternative to the consultation and knowledge of European Community Directives that must be followed during the practical operations.
Note: If the design activity is developed by the Supplier under OTOMELARA responsibility (based on a Requirement specification definition), the design process to be followed is defined in Table 9 while the documentation to be issued has to be supplemented with that required by the applicable European Directives (Table 15) and will be verified/approved by OTOMELARA.

10.1 SAFETY RULES

Design, manufacturing and testing of an equipment or a fixture (hereinafter briefly named: equipment) shall conform to European Directives (in case of CE marking) or, in case the responsible of design does not envisage the need of CE marking (unless required by OTO MELARA in the order), the equipment/fixture shall conform, with documented evidence, with what reported in attachments 5,6, and 7 of “Decreto Legislativo 9 aprile 2008, n. 81”. That evidence shall be sent to OTO MELARA together with documents required by law and by Table 15 of this document. For electric equipment European Directives always apply.

10.2 CE MARKING

CE marking, considered as a proof of the positive outcome of design, manufacturing and testing regulated activities duly documented, is necessary for use in OTO MELARA facilities or for sale of:
- equipment that can be considered comparable to a machine (including lifting or load conditioning gears)
- equipment subject to pressure;
- electric equipment.

The CE label, once affixed, attests the conformity of equipment, electric equipment with applicable Directives and its safe usage.
As a general criterion the Supplier shall affix CE marking in accordance with applicable directive minimum requirements and is bond to:

a. preventively verify, at specification and or design phase, equipment conformity with safety essentials requirements as per applicable Directive;
b. issue a declaration of conformity that shall be delivered together with the product;
c. prepare a Technical Dossier in accordance with applicable Directive that shall be maintained and available according to law;
d. prepare an User Manual in accordance with applicable requirements to be delivered together with the supply (including information about possible residual risks).

10.3 DESIGN

The Supplier shall observe the applicable Directive and give the relevant evidences for correct design approach in particular (where applicable):
- European Directive n. 2006/42/CE for machines;
- European Directive n. 1997/23/CE for equipment subject to pressure;
- European Directive n. 2006/95/CE for low voltage equipment (LVD);
- European Directive n. 2004/108/CE relevant to Electro-magnetic Compatibility.

The Supplier shall remain updated on the matter.

10.3.1 Technical Dossier (TD)

The Supplier must prepare a Technical Dossier demonstrating that the equipment complies with the requirements of the specific European Directive.
For the Technical Dossier content, the Supplier must refer to the relevant European Directive annex.

10.3.1.1 Risk analysis/evaluation dossier (RED)

The Supplier must draw up a risk evaluation dossier in compliance with the applicable regulations (see as a suitable support UNI EN ISO 14121-1:2007, UNI EN ISO 12100-1:2009 and UNI EN ISO 12100-2:2009).

10.3.2 User Manual (UM)

The Supplier must issue a User and Safety Manual in one or more official European Community languages assuming the responsibility; to this end, it must insert in the instruction manual the words 'Original instructions' with a copy in Italian, (if it does not already exist); this translation must bear the words 'Translation of the original instructions'.
In general, the User Manual covers also the following:

a. installation
b. assembly
c. prearrangement for the installation;
d. setting to work
e. operation
f. maintenance and inspection plan
g. list of risks that cannot be eliminated at a design stage, with an indication of personal protection equipment
h. technical data, weight and dimensions
i. spare parts
j. interfaces (mechanical, electrical, hydraulic, pneumatic)..

10.3.3 Special Processes

For execution of Special processes including welded joints used for assembling the various parts of the equipment, refer to the provisions of the subsections entitled SPECIAL AND/OR CRITICAL PROCESSES and NON-DESTRUCTIVE TESTS (NDT) and to applicable provisions of law.

10.4 TESTING

The Supplier must provide evidence of having performed validation and testing of the equipment/fixture with the public agency entitled to issue the related certificate; all the relevant documents shall be provided to OTO MELARA together with the equipment/fixture supplied.

10.5 CE LABEL AND MARKING

The equipment/fixture shall be provided with a CE label in a visible zone with readable and indelible inscriptions in accordance with applicable European Directive.

10.6 DECLARATION OF CE CONFORMITY

It is the declaration released by the manufacturer or its agent inside European Community attesting that equipment offered for sale observes all related essential health and safety requirements concerning it. That documentation containing data required by applicable Directives shall be signed by a person authorized by the manufacturer or its mandatory and sent to OTO MELARA together with the supply.

Names and positions inside the Supplier organisation shall be reported in full and in a readable form.

OTO MELARA reserves the right to ask the Supplier for the documentation attesting authorization to issue and subscribe that declaration.

11 PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS

This Chapter integrates previously defined requirements under subsection APPLICABILITY. The documents to deliver to OTO MELARA are listed in Table 9.
The Supplier of a design activity based on OTO MELARA requirements shall have a Quality management System in accordance with what reported at paragraph 5 according to criticality level of item or assembly to be developed.

a. With reference to AQAP-2110/ISO 9001:2008/AQAP-2210 (EN/AS/SJAC 9100:2009 for aeronautical supplies) standards, it is necessary to meet the requirements regarding: design and development planning, input elements, output elements, review, verification, validation and control of modifications. If the supply includes software see also subsection SOFTWARE.
b. The product must be developed and properly documented according to the applicable standards and with reference to the planning under the Quality Plan and the Configuration Management Plan.
c. In case of low complexity products or not safety critical OTO MELARA Quality department will define with the Supplier possible deviations to the present document that will be dealt with in the Order and described in the Supplier's Quality Plan.

11.1 GENERAL

If the Order requires design activities to be developed, the Supplier must:

a. make sure of being in possession of the physical, functional and performance interface requirements for the product to supply
b. define in a Technical Specification for design purposes and the internal requirements traceable, as well as higher level requirements
c. identify the critical and key design elements according to OTO MELARA criteria (subsections: Criticality Level and Commodity classification in terms of quality requirements)
d. develop and send OTO MELARA, within **60 calendar days from the Order receipt**, a Project Plan of the Design development (as part of the Quality Plan) containing the documents to draw up and the activities associated with:

- the design and development planning (GANTT diagram) in accordance with AQAP-2110/ISO 9001:2008 and AQAP-2210 requirements (in case of Software development) and OTO MELARA's requirements detailed at a macro activity level to ensure an effective project management (EN/AS/SJAC 9100:2009 for aeronautical supplies);
- the Design Reviews carried out both internally and jointly with OTO MELARA (mandatory for Requirement Examination and after performing the type tests)
- the strategy of the logistic project structure (agreed jointly with OTO MELARA)
- the mode of coding the technical documentation and part number
- the project verification and validation
- the configuration management in accordance with the requirements under AQAP-2110 and STANAG 4159
- the identification and management of COTS HW/SW (Commercial Off-The-Shelf) components and modified COTS used in the design, with a description of any obsolescence management strategies to gurantee the support and compatibility of its products

e. subdivide the development stages of the assigned design, logically and sequentially (conceptual, final and executive design)
f. process the required technical documentation (specifications, functional diagrams, assembly and part drawings) connected with the different design development stages
g. execute and record the Design Review meetings, detailing the technical and interface aspects exhaustively and comprehensively
h. document the design verification and functional validation activities to provide proper confidence on the project, giving adequate evidence in a compliance table.
i. freeze the design or its values through appropriate documentation (drawings, lists and technical specifications), each identified with the related revision index, to determine the reference configuration (baseline)
j. process and update the design configuration through a careful analysis and application of the design modifications following freezing in accordance to what reported ay paragraph 6.3.2
k. use qualified calculation programs
l. use qualified personnel for specific activities
m. ensure adequate resources to execute the needs of the project, in order to respect the programmes agreed in the contract
n. handle any delays through effective recovery actions, promptly report any lack of information or discrepancies regarding the supply received, so as to prevent from being in a situation of delay which, in the absence of such information, will be charged by OTO MELARA to the Supplier
o. ensure the interface with OTO MELARA systems, in the development of reports in an electronic form, and promptly report to OTO MELARA any (mechanical, electrical, electronic, software, CAD, CAE and CAM) interface problems arising out of the development of the design and requiring OTO MELARA's specific authorisation before starting any related activity
p. provide OTO MELARA with the elements and data that allow an evaluation of the consequences following authorisation to design changes involving the Supplier, at any title:
   - approval by OTO MELARA of major changes with an impact on interchange ability (Form, Fit and Function)
   - information and possible reclassification of minor changes.

It is forbidden to the Supplier the outsourcing of activities provided by the Order (unless previously authorized by OTO MELARA).

11.2 INSTRUMENTS USED BY OTO MELARA FOR COORDINATION AND SUPERVISION

OTO MELARA intends to coordinate and supervise the design activity through:
a. technical meetings
b. approval of the Project Development Plan
c. participation to the Design Review
d. design expediting meetings and verifications
e. acquisition of design documents
f. acquisition of document lists defining the configuration baseline

g. approval of the verification and validation plan
h. approval of calculation and sizing analyses and reports
i. attendance at type tests
j. system and process audit.

OTO MELARA reserves the right to apply penalties for any delays on the development schedule set out in the Project Plan or for any failure in performing the required activities, by applying the methods and entities specified on the order.
(
For active participation in the Design Reviews, OTO MELARA (Design and Quality Dept.) shall receive the documents subject to valuation at least **10 working days** in advance.

Attendance to the meetings, tests, Design Review and document approval by OTO MELARA personnel does not relieve the Supplier from its design liabilities as regard contract and legal obligations.

11.3 RAMS (Reliability, Availability, Maintainability and Safety) and LCC (Life Cycle Cost) REQUIREMENTS

For installations, systems and assemblies, the RAMS/LCC (qualitative and quantitative) requirements that the object of the supply must meet are specified in the RAMS/LCC specification issued by OTO MELARA.

Besides the requirement values, this specification indicates the mode of development of the RAMS/LCC analyses to provide.

If this Specification is not issued by OTO MELARA, the supply shall comply with the following standards:
- EN 50126 (national and European market)
- MIL STD 882
- MIL HDBK 470 (USA market)
- STANAG 4174 and ARMP NATO procedures (only if required in the contract).

In general, the required documentation includes, as applicable:
a. Safety Analysis divided in phases as per MIL STD 882
b. Reliability forecast analysis (format and contents to be agreed on with OTO MELARA)
c. FMEA/FMECA analysis (format and contents to be agreed on with OTO MELARA) or safety analysis (format and contents to be agreed on with OTO MELARA)
d. Preventive and corrective maintenance analysis (format and contents to be agreed on with OTO MELARA Logistics Business Line)
e. List of recommended spare parts under the warranty, to be determined in accordance with RAMS evaluations and OTO MELARA Logistics Business Line (with an indication of the unit prices and the associated logistic data ad defined per section Spare parts included in the supply and/or in stock and required quantities for each year of warranty)
f. Average repair cost and time report.

11.4 COMPONENTS WITH SAFETY CRITICALITY LEVEL 1

If the design and physical construction of a product with safety criticality level 1 are required, the Supplier, besides the provisions under subsection 10.1 c), undertakes to:
a. keep for at least **15 years** from the date of end of production of the product on which the component is installed: orders and their variants, drawings and technical specifications; design reviews; all the documents proving the safety tests

performed; requests for changes to the product or production process; reports of manufacturing defects; test results. This provision also applies after cessation of the supply to OTO MELARA

b. keep for each supply the documents proving the features of the material and tests regarding all the prescribed safety features
c. report promptly to OTO MELARA Quality any anomalies found as regards the safety features
d. report to OTO MELARA Design Department any proposed changes to parts and/or components, materials, and work and control processes
e. show on the component produced its name or identification code and the date or code of manufacture. The date of production must show the month and year of construction or the production lot if there is more than one lot per month
f. allow OTO MELARA personnel to verify the efficiency of its organisation in relation to the safety products
g. transfer these OTO MELARA requirements officially to its Sub Suppliers
h. provide OTO MELARA with full documentation on OTO MELARA safety components should the Supplier cease its activity.

11.5 DESIGN PART LIST (BASELINE)

The Supplier must prepare and consign to OTO MELARA a Part List covering the supply, structured according to “father-son” hierarchical logic, in tree form down to an elementary component level. The part’s tree must be provided on paper and a computer file (Microsoft Excel unless specified otherwise on the order) and must contain at least the following information for each part:

a. Identification of the hierarchical level
b. part code
c. description
d. revision
e. associated document code
f. quantity at an assembly level.

This Part List must be issued by the Supplier for the first time within 60 days of the formal or informal supply agreement and must be updated every two months up until completion of the supply, unless specified otherwise by OTO MELARA.

11.6 SERIES PRODUCTION

All the requirements set out in this document apply in this case. The Quality Plan and the Configuration Management Plan will be updated and finalised at this stage in the product’s life cycle.

11.7 DRAFTING

For activities that cannot be strictly defined as design, i.e.:

- drafting of parts intended to become components of an assembly designed by OTO MELARA
- new drafting of assemblies or parts for updating graphic or standards related to tolerance indication and representation convention
- three dimensions modelling (solid modelling) from old drawing

that lead to solid models or drawings identified as OTO MELARA proprietary the supplier shall follow the OTO MELARA rules for filling the drawing legend.

The Supplier shall also check the correspondence and consistency of the assemblies and parts designed with the original drawings (in case of redesigning) or with the assembly from which the new drawings are made (in case of redesigning special components or three-dimensional modelling).

12 SOFTWARE

If the supply includes software see also subsection PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS.
If the supply consists of software only, the Supplier must guarantee the use of life cycle model organised in accordance with AQAP-2110/ISO 9001:2008 (EN/AS/SJAC 9100:2009 for aeronautical supplies), AQAP-2210, ISO/IEC 12207 and ISO/IEC 9126 standards, including at least the stages described below.
Anyway, making reference to AQAP-2110/ISO 9001:2008/AQAP-2210, requirements related to design and development planning, input elements, output elements, review, validation and change control shall be satisfied.
The methods and organisation with which the Supplier intends to develop its activities must be defined in a Quality Plan, with the Configuration Management Plan attached to it.

12.1 SOFTWARE REQUIREMENTS

All the software requirements must be defined and documented in a "software requirement" specification. The specification shall trace the requirements defined at upper level by OTO MELARA. This document must describe the performance, architecture and make-up of the whole software design, and contain a block diagram showing single elements of the software configuration (modules) and their connections. Unless specified otherwise, a system control status diagram must also be included.

12.2 SOFTWARE IMPLEMENTATION

In this stage, the Supplier must define the software architecture, identify and specify the software modules, and write the code according to a standard development cycle that shall be in accordance with what reported in the "requirements specification".
The documents should contain at least the following information:

a. a description of the software's functions
b. the architecture of the software modules
c. the internal structure of the software processor
d. a list and a description of the software data inputs/outputs
e. requirements trace ability to the upper level.

These documents must be approved by OTO MELARA.

12.3 SOFTWARE MODULE FUNCTION TESTS

This concerns the software stages at each elementary level of the design in order to verify their correctness and compliance with the specifications. The documents issued during this stage must describe, to a level of depth agreed with OTO MELARA and described in the Test Plan, all the procedures for the function tests that have to be performed on each module, and must report the results.

12.4 SOFTWARE INTEGRATION

The various modules must be integrated and tested following the procedure envisaged inside the Test Plan to prove that they comply with the system requirements. Dedicated Test Report shall be issued to give evidence of the related activities.

12.5 SOFTWARE INTEGRATION TESTS AND VALIDATION

All tests carried out shall be documented and recorded. The functional and performance requirements shall be specified and the test procedures carried out on the modules shall be documented (as well as the requirement compliance matrix). The Supplier shall provide at its own expense the necessary technical assistance for the integration of the

modules in the final product and for the solution of any compatibility and interface problems with other systems/subsystems/components. When required, the Supplier shall be available to attend the joint integration, test and validation activities of its modules, that will be carried out at OTO MELARA premises and/or at the final user.

12.6 SOFTWARE RELEASE

At the end of the validation tests and before the delivery of the software, the Supplier shall issue the Product Baseline which shall contain all reference and documents that identify unambiguously the final product and maintain it during OTO MELARA product life cycle.
The Supplier shall assure Configuration and obsolescence management for support and compatibility of its product.

12.7 MAINTENANCE DURING PRODUCTION STAGE AND AFTER SALE

Once released the Baseline the product enters the maintenance phase where it remains till the end of its life cycle.

In this stage the Supplier is responsible for change introduction. The Supplier must define and submit to OTO MELARA for approval the criteria for selecting the tests to be repeated in the event of a modification (including non-regression tests of the performance). All the tests performed must be fully documented. The Supplier is also responsible for guaranteeing the logistic and organisational support required for on-site maintenance of its software products involving the following types of activity:

a. solving problems
b. modifying interfaces
c. expansion of the functions or improving performances

These maintenance activities must be recorded in the Configuration Management.

12.8 SOFTWARE OWNERSHIP

12.8.1 Software developed by the Supplier

The Supplier must ensure that the software supplied is entirely free of copyrights and licences and is provided with the necessary licenses, in order to run it without restrictions of any kind.
The Supplier must provide evidence of the documentation containing the information required for software maintenance and, if specifically requested to do so, must hand over the source file (source code).

12.8.2 Commercial Software (COTS or Modified COTS)

The Supplier must ensure that commercial software employed is well-established and validated by the market or by the producer and covered by regular user license which allows its transfer to OTO MELARA and end users, with no additional charges for OTO MELARA and its customers and without incurring to any violation of applicable laws.

12.9 APPLICABLE REQUIREMENTS

The section defines the activities and documents to be developed in connection with the above stages (see **Table II** of paragraph 11.10).
The activity and document modulation criteria are established in relation to the **software awareness level** attributed by OTO MELARA for each supply in the technical specification covering software development activities or in the purchase order/contract (see **Table III** of paragraph 11.10).
There are three awareness levels determined by criticality levels are three (1, 2 and 3) and they are defined on the basis of the following:

a. safety impact
b. integration complexity
c. development architecture
d. availability level
e. well-proven design
f. specific critical characteristics (ex.: for operation and mission);
g. maintainability throughout the life cycle of the product;
h. other important contract requirements.

If the purchase order/contract or the specification referred to does not define the above level, the Supplier must apply level 2.
The Supplier must send the Project Plan with the contents shown in **Table II** to OTO MELARA for approval, **within 60 calendar days** of the date shown on the NTP (Notice to Proceed) or in the letter of assignment (both intended as contract documents) or in the purchase order/contract.
When OTO MELARA formalises its relationship with the Supplier by means of several documents issued on successive dates, and therefore increasingly complete, the Supplier must refer to the date of the first such document.
The Project Plan must include the software activity development program and the expected dates of delivery of the documents required.
Table II establishes the types of documents required, with a brief indication of their contents and whether OTO MELARA approval is required or not.
Table III details the application of the activities and documents according to the awareness level required and depending if the software product is included or not in a complex system (weapon system).

12.10 WORK PRODUCTS

The following sub sections report the deliverable Key Work Products which are elements to be consigned in a system/software acquisition.

12.10.1 Definitions

The Work Products (WP) referred to in this document are documents and other items produced and used by the Supplier, to design, build, test, validate, deliver and maintain the software or other equipment defined here that contains software.
Work Products can be divided into three main categories:

- **OR** – "Organisation Work Products" are produced and used by the Supplier as general and standard guidelines for all projects, together with rules of application/adaptation.
- **PR** – "Project Work Products" are generate to plan, control and verify various stages of the defined project.
- **RE** – "Result Work Products (recorded)" are the result of the performance of all the activities of a defined project. They confirm that the activities are performed in accordance with the contents of the Project Work Products.

12.10.2 Description of the main Work Products and their use in system/ software development

Various Work Product Classes can be defined for each of the above categories. This classification is provided in **Table I (of this sub section)**.
There are various types of Work Products. Each type belongs to one or more Classes.

The **Table II** shows a list of various Work Products, and their Classes, that are important for OTO MELARA buying a system/software developed by a Supplier.
Knowing the system/software purchased by means of the related Work Products enables OTO MELARA to realise that the system/software is suitable for the intended use for which it was purchased and also enables to co-operate with the Supplier.
As a minimum requirement, all the Work Products listed in **Table II** are made and used by the Supplier, but generally only some of them are sent to the Customer, depending on the degree of awareness of the system/product the Customer wishes to acquire. This is shown in **Table III**. Similar topics can be treated in the same document (as per the Quality Plan).

Table III lists the requirements for supplying Work Products to OTO MELARA, expressed by three level of completeness: **1, 2 and 3** (according to criticality level), which also distinguish the status of "purchase of software only" from "purchase of the system".

- The letter "X" means to be consigned.
- If there are numbers or other words identifying the Work Product, or other letters or codes, then what has to be consigned is the Work Product applied to the element indicated.

In the Revision Documentation:

- Stages* means: System/Software Requirements, System/Software Architecture, Test and Validation Procedures
- Stages** means: Stages*, Software Design, Code, Test and Validation Plans, Test and Validation Reports

TABLE I WORK PRODUCT (WP) CATEGORIES AND CLASSES

WP category identification	WP category	WP class identification	WP CLASS
OR	**ORGANISATION**	OR 1	Strategy
		OR 2	Standard/Procedure
PR	**PROJECT**	PR. 1	Plan
		PR.2	Requirements
		PR.3	Criteria
		PR.4	Product (Design, Code, Programs, data structure)
		PR.5	Material delivered in advance
RE	**DOCUMENTATION**	RE. 1	Report
		RE.2	Module compiled
		RE.3	Minutes of meetings

TABLE II – TYPES OF WORK PRODUCT (WP)
The wording "Test" is to be intended as applicable to SW supply only

WP	WP CLASS	Type of Work Product	Description	Approved by OTO MELARA (Y=Yes or N=Not)
1	OR.2	System, life cycle software	Description of the System/Software development stages, their inputs/outputs and the correlation between stages.	N
2	OR.2	Coding standard	Rules applied for writing the software's source code (style, restrictions, use of notes).	N
3	PR.1	Project/ Development Plan	Description of the aims, activities, dependences, resources, times, responsibilities, system/software development and production inputs and outputs.	Y
4	RE.3	Minutes of meeting (general)	Interventions and important decisions passed at the meeting. General: this applies to each subject referring to a project.	N
5 **5a**	RE.1 RE.1	Analysis result (general) Sw safety analysis	Results from the analysis of a work product according to defined criteria. General: this applies to each WP. Sw safety analysis of the whole product	-Depending on the WP -Y
6	OR.1	Project risk management strategy	Organisational rules to identify, analyse, manage any project risks	Y
7 **7a**	OR.1 P.R.1	- Quality strategy - System and Software Quality Plan	This defines the quality objectives and the means and resources to control and facilitate their achievement.	-N -Y
8	RE.1	Review of documents (general)	Report on the review of the results of each project stage or activity. General: this applies to each stage or activity.	The approval depends on the stage with reference to what established in the Quality Plan
9 **9a**	OR.1 PR.2 PR.1	Strategy /Re-utilization requirements Re-utilization plan	This sets out the rules, requirements and limitations for the reuse of a system/software. This defines the re-utilisation objectives and actions/resources in order to achieve the set objectives.	-N - Y
10 **10a**	OR.1 PR.1	Acquisition strategy Acquisition plan	This defines the objectives, rules and interventions for acquiring system / subsystem / software from external sources (sub Suppliers).	-N -Y
11 **11a**	PR.2 PR.2	System requirement specification Software requirement specification	This defines the architecture, performance characteristics, and the quality of the system/software to develop or purchase on the basis of OTO MELARA requirements.	-Y -Y
12	PR.2	Software design specification	This defines the main components of the software to develop and their external/internal interfaces.	Y

WP	WP CLASS	Type of Work Product	Description	Approved by OTO MELARA (Y=Yes or N=Not)
13	PR.4	Software design	This defines the main software components to develop (to be traced) and their external/system/internal interfaces.	Y
14	OR.1	- Test strategy/validation	- This defines the objectives, criteria, techniques, activities. In general it applies to all levels of test/validation.	-N
14a	PR.1	- Test/Validation plan (general)	- This defines the test objectives of a defined project and the activities, resources and techniques, the revised input and output data, the test pass/fail criteria. General: this applies to all test levels (unit, integration, system, acceptance).	-Y
15	OR.1	- Unit test strategy	- reproducible Test strategy (WP 14) applied to a software component, in general an executable unit.	-N
15a	PR.1	- Unit test plan	- Test plan (WP14a) applied to a software component, in general an executable unit.	-N
16	OR.1	- test strategy/integration test	- Test strategy (WP 14) applied to the system intended as a progressive components aggregation.	-N
16a	PR.1	- test strategy/integration test plan	- Test plan (WP14a) applied to the progressive components aggregation.	-Y
17	RE.1	Software Validation	Verification of requirement achievement (the Report shall trace all requirements at various level).	Y
18	OR.1	- System test strategy	- Test strategy (WP 14) applied to the entire system.	-N
18a	PR.1	- System test plan	- Test plan (WP14a) applied to the entire system.	-Y
19	OR.1	- Regression test strategy	- Test strategy (WP 14) applied to check whether a change to the software affects the system performance.	-N
19a	PR.1	- Regression test plan	- Test plan (WP 14a) to check whether a change to the software affects the system performance.	-Y
20	OR.1	- Acceptance test strategy	- Test strategy (WP 14) applied to the entire system for validation by the Customer.	-Y
20a	PR.1	- Acceptance test plan	- Test plan (WP14a) applied to the entire system for validation by the Customer.	-Y

WP	WP CLASS	Type of Work Product	Description	Approved by OTO MELARA (Y=Yes or N=Not)
21	PR.3	Test procedure (general)	Operative description of test plan actuation. General: this applies to each test level.	Y
22	RE.1	Test report (general)	Results of the execution of a test procedure. General: this applies to each test level.	Y
23	OR.1 PR.1	Configuration Management strategy/plan (CM)	This defines the rules to maintain the uniformity between the components of the system/software versions, following carefully and recording all control changes.	Y
24 **24a**	PR. 4 PR.4	Configuration elements - Software configuration	- elements kept under configuration control. - Source codes, documents, application development system, work product.	-Y -Y
25	RE.2	Requests for changes	This defines the proposal of a change, generally in the specification of the system/software requirements, the source can deviate from either OTO MELARA or the Supplier application development system.	Y
26	RE.2	Change control documents	This follows the requests for a change until its completion (with or without actual changes), with all the related information.	Y
27	OR.1	Maintenance plan/strategy	This defines the rules, priorities, events and responsibilities for changes to the installed system/software components.	Y
28	PR.4	Customer service documentation	User manuals, diagnostics, maintenance.	Y

TABLE III – WORK PRODUCTS (WP) TO SUPPLY

WP	TYPE OF WP	SYSTEM			SOFTWARE		
		3	2	1	3	2	1
1.	System/Software Life Cycle Model	x	x	x	x	x	x
2.	Coding Standard	-	-	x	-	-	x
3.	Design Plan	x	x	x	x	x	x
4.	Minutes of the meeting (general)	-	-	reviews	-	-	reviews
5.	Analysis result (general)	-	11a	11a,14, 15, risk, code		11a	11a,14, 15, risk, code
6.	Project Risk Management Strategy	-	x	x	-	x	x
7.	-Quality strategy **-7a** System/Software Quality Plan	- x	x x	x x	- x	x x	x x
8.	Review documents (general)	-	Stages*	Stages**	-	Stages*	Stages**
9.	-Re-utilisation Requirement Strategy **-9a** Re-utilisation plan	- -	- x	x x	- -	- x	X x
10.	-Acquisition Strategy **- 10a** Acquisition Plan	- -	x x	x x	- -	x x	x x
11.	-System Requirement Specification **-11a** Software Requirement Specification	x x	x x	x x	- x	- x	- x
12.	Software Design Specification	x	x	x	x	x	x
13.	Software Design	x	x	x	x	x	x
14.	-Test/Validation Strategy - **14a** Test Validation Plan	SW SW	SW SW	SW SW	SW SW	SW SW	SW SW
15.	- Unit Test Strategy -**15a** Test Plan (general)	- -	- -	x x	- -	- -	X X
16.	-Integration /Test Strategy -**16a** Integration Test Plan	- x	x x	x x	- -	SW SW	SW SW
17.	Software Validation	x	x	x	x	x	x
18.	-System Test Strategy -**18a** System Test Plan	- x	x x	x x	- -	- -	- -
19.	-No Regression Test Strategy of the performance -**19a** Non Regression Test Plan	- -	- x	x x	- -	- x	x x

WP	TYPE OF WP	SYSTEM			SOFTWARE		
		3	2	1	3	2	1
20.	-Acceptance Test Strategy -**20a** Acceptance Test Plan	x x	x x	x x	x x	x x	X x
21.	Test Procedures (general)	-	SW/SYS	SW/SYS	-	SW	SW
22.	Test Report (general)	SW/SYS	SW/SYS	SW/SYS	SW	SW	SW
23.	Strategy/Configuration Management Plan	-	x	x	-	x	x
24.	- Configuration Elements - **24a** Software Configuration	x x	x x	x x	x x	x x	x x
25.	Change Request	x	x	x	x	x	x
26.	Change Control Documents	x	x	x	x	x	x
27.	Maintenance Strategy/ Plan	x	x	x	x	x	x
28.	Customer Support Documentation	x	x	x	x	x	x
29.	Software Version Description Document	x	x	x	x	x	x

13 GENERAL REQUIREMENTS FOR WELDED JOINTS AND UNWELDED MECHANICAL/ELECTRICAL CONNECTIONS

13.1 GENERAL REQUIREMENTS FOR MECHANICAL WELDS

In general, unless otherwise specified in OTO MELARA's orders or in the referenced technical documentation, welding activities shall be performed in accordance with quality requirements of standards of the family ex UNI EN 729 (729-2; 729-3;729-4) replaced by UNI EN ISO 3834 (3834-2; 3834-3;3834-4) one, to integrate the Supplier's Quality System already fulfilling the ISO 9001:2008 standards for welded constructions.

That family of standards is structured in a way to be used as reference for any weld construction conforming to different quality levels addressing adequately all welding processes and all related aspects capable to influence the finite product quality.

In particular the following elements are considered:

- project and/or contract review
- identification of the critical characteristics;
- Identification of the risks and their management, with the implementation of the actions required to mitigate the risks;
- management of residual risks;
- sub Supplier
- welding personnel
- inspection and test personnel
- equipment
- welding activities
- filler metal
- base material storage
- after weld heat treatments
- inspections and tests (in accordance with appropriate UNI EN standards if not otherwise specified)
- non conformity and corrective activity
- calibration
- identification and trace ability
- documentation.

TABLE 17 CORRESPONDENCE BETWEEN THE LEVEL OF THE SUPPLY CRITICALITY LEVEL OF CERTIFICATION OF THE PROCESS OF WELDING OR RESPECT OF RELATIVE REQUIREMENT

Criticality Level	Quality Requirement of the welding process	Reference Standards	Note
1	Comprehensive quality requirements	ISO 3834-2	Certification by a recognized third party agency or, as an alternative, an adequate quality system (assessed and certified by OTO MELARA through dedicated inspections and audits).
2	Comprehensive quality requirements/Standard quality requirements[125]	ISO 3834-2 /-3	Certification by a recognized third party agency or, as an alternative, an adequate quality system (assessed and certified by OTO MELARA through dedicated inspections and audits).
3	Standard quality requirements/Elementary quality requirements [126]	ISO 3834-3 /-4	The Supplier shall must develop, document, implement a system that gives a good level of confidence that items are consistent with the requirements.

[125] According to what established by OTO MELARA welding coordinators

[126] According to what is established by OTO MELARA welding coordinators

Harmonised standards referenced by EN ISO 3834 don't exclude validity of qualification achieved in accordance to (AWS-MIL-ASME standards) provided they are compatible with the specified activity referring to the main parameters (base material, filler metal, shielding gas and so on).

All welding activities must be supervised by personnel with the appropriate skill (EWF professional figure) whose know how about welding encompasses basic welding principles and procedure; his responsibility comprises:

- co-ordinate activities for qualifying the procedures (WPAR/PQR) before production in accordance with the relevant section of UNI EN ISO 15614 (unless otherwise specified in the order or contract)
- compile the WPS relevant to the envisaged typical joints
- co-ordinate qualification of the welders involved in production
- co-ordinate and/or execute the test on production welds.

Welder and process qualification (WPAR/PQR) is a document that is issued by a recognised or examiner body to the welder and to the organisation which have passed specific welding tests.

13.1.1 General requirements for control activities

Welded joints shall be free from unacceptable defects that can be prejudicial for the intended use. Acceptability levels shall conform to applicable standards. After welding the acceptability shall be verified in accordance with applicable criteria unless otherwise defined in the order or drawing:

• through visual examination as per UNI EN 970 (flaws evaluation in accordance with: UNI EN ISO 5817-class "Medio-C" for steel arc welding; UNI EN ISO 10042- class "Medio-C" for aluminium and its alloys arc welded joints);

• through Non Destructive Tests as per applicable UNI EN for the type of control as provided for by the MCP (Manufacturing and Control Plan);

• dimensional examination of welding as per UNI EN 22553 (ISO 2553).

Control activity evidences shall be recorded on suitable forms that must include qualified personnel names. Non-destructive testing personnel shall be qualified in accordance with UNI EN 473.

The outcome of inspections and tests after welding shall be recorded in the dedicated fields of MCP for the internal or external cognizant authorities.

13.2 WELDING PROCEDURE SPECIFICATION (WPS)

To give instruction to the welder the organisation shall use Welding Procedure Specification (WPS) arranging them in the workshop at the workstations.

For accomplishment it can use specific instructions (work cycles) that include all necessary elements for carrying out correctly the welding activity. These instructions shall be prepared on the basis of an already qualified WPS.

Welds shall not be subject to grinding if not otherwise indicated on the drawings.

The WPS contents shall be in accordance with specific basic requirements related to the parameters used for the weld joint execution. The producer can use as a model the form reported as **attachment 5.**

The WPS (which shall undergo a verification by OTO MELARA Quality) shall contain the following information, as applicable:

General indications

- WPS number

- referenced standard
- WPAR or PQR reference number
- date of issue
- approvals.

Specific indications:

- **Welding process**

Type of process (TIG, MIG, MAG, with electric resistance RSW, Covered Electrode) and method (manual, semiautomatic, automatic, robot welding) for the welding used.

- **Joint drawing**

Graphic representation of the welded joint with an indication of the related dimensions and methods for preparing the relative edges.

- **Joint**

Indication of the type of joint, welding material (the proprieties must be the same as the base material) or reaction plate (ceramic or different material incoherent), preparation and cleaning prior to the welding of both edges (specifying whether brushes or solvents must be used depending on the type of material treated); for aluminium alloys is suggested a stainless steel brush.

- **Base material**

Indication of the group number, the type and grade of the material treated (steel, aluminium, etc.), the thickness and outside diameter of the edges.

- **filler material**

Indication of the normative references (UNI ISO for Europe and AWS for the USA) and the proprieties of the material, such as the classification, dimensions, trade name, manufacturer and welding device.

- **Welding position**

Indication of the positions (horizontal, vertical, L-shaped, etc), welding direction ascending or descending and any other useful indications.

- **Pre-heating**

Indication of pre and post-heating temperatures and inter-pass (where applicable).

- **GAS**

Indication of the gases used for protection, specifying the types (name and chemical symbol), mix percentage and flow rate (l/min.). Reference standard EN 439.

- **Electrical features**

Indication of the current (continuous or alternating), its polarity (straight or reverse), voltage, filler metal mode of transfer.

- **Welding technique**

Indication of the mode of transfer of the welding metal (short-arc, spray-arc, pulsed-arc, dip transfer), diameter of the nozzle, wire free distance, preliminary and inter-pass cleaning, method of grooving, type of seam, torch angle and direction, and the electrode type.

The document must be stamped and approved by the welding technician.

13.3 WELDING PROCEDURE QUALIFICATION (WPAR/PQR)

As a general approach, the welding procedure qualification activities follow the rules related to the product. UNI EN ISO 15614-2 standard, for example, has as matter the welding procedure qualification for aluminium and its alloys through the execution of representing test specimens. The standard describes the specific weld qualification procedure (WPS), in particular test specimens form and dimension, and execution conditions, validity limits, tests and controls are described. The same execution

procedures are valid for other metals which reference standard is described in the family of UNI EN ISO 15614 (i.e. 15614-1).
Qualification procedures (WPAR) are described in UNI EN ISO 15614 cited in UNI EN ISO 3834 for the specific activities.
Welding test specimens, relevant controls and tests to be executed are specifically described in the family of UNI EN ISO 15614 standards applicable these activities shall be executed in presence of the examiner (EWF professional) or of the examiner body (third party legally recognised i.e. Bureau Veritas, RINA, Istituto Italiano Saldatura, and so on).
For qualifying a welding procedure it's necessary to draw a preliminary WPS (pWPS) according to the appropriate UNI EN ISO 15614 family of standards and to the applicable part of EN ISO 15609, in which validity and welding parameters shall be specified and all information regarding the execution of the weld test specimen shall be described.
The pWPS shall make reference to other support standards EN or ISO such as EN ISO 4063 for numerical coding of welding process, while for base materials the reference is given by CEN ISO/TR 15608. For filler metals the reference to be used have been issued by Under committee SC3 "Welding consumables".
If test specimens result compliant the WPAR/PQR is obtained, it shall show in details the achieved results and shall be undersigned by the examiner or the examiner body.
To make an easy evaluation of data a specific form for WPAR/PQR shall be used to record all weld details, validity and test results.

13.4 CONTENTS OF THE WPAR/PQR

The WPAR or PQR prepared and approved by the entitled professionals, must contain, the following information:

General

- Reference WPS (used for test specimen execution)
- Personal data of the welder: first, second name, date and place of birth.

Specific

- **Test specimen details and approval validity filed for the following parameters:**
  - welding process
  - plate, pipes, weld joint type
  - base material group, filler metal, shielding gas or flux
  - dimensions, thickness, external pipe diameter, welding position.
- **Tests**

  Test shall be established and carried out by the examiner or by the examiner body and shall comprise: visual inspection, applicable NDC, fracture and bending test, additional tests (the laboratory certification shall be attached if required). For each test and/or proof shall be specified which one has been carried out and passed. Place, date of issue and expiry stamp and signature of the manufacturer shall be also reported.

13.5 SPECIAL RULES FOR BALISTIC MATERIALS

All the welding procedures must be performed in compliance with the relevant specifications and in suitable environments (temperature and humidity values matching the requirements of the standards covering the features of the specific materials to be welded). Before starting welding operations, the above materials must be stored for at least 24 hours in the destination environment so as to allow them to reach the correct ambient temperature.

The welders must possess basic qualification suitable for the type of material and welding process and be approved by OTO MELARA's personnel who possess the necessary requisites and in compliance with the applicable military standards.

13.6 GENERAL RULES FOR STAINLESS STEEL WELDED JOINTS

In addition to the prescriptions related to the definition and qualification of the welding process (see also GENERAL REQUIREMENTS FOR WELDED JOINTS AND UNWELDED MECHANICAL/ELECTRICAL CONNECTIONS) the Supplier shall stick to the following indications.

The resistance to corrosion of stainless steel is also dependent on condition of the surface which enters in contact with the corrosion environment.
There are recommended procedure and treatments to polish the stainless steel surfaces: either plates that have been laminated, hot forged, heat treatments or finished items machined or welded etc.
In both cases it's necessary to polish the surface from slag or dross that prevent it to enter in contact with atmospheric oxygen and then forming the passive layer.
What above to avoid that, once the item is put in the environment, localised corrosion events take place.
The Supplier shall follow the prescriptions reported below:

a. Pickling

The treatment is intended to remove slag or dross that form as a consequence of high temperature heating in presence of oxygen as, for example hot rolling, forging, heat treatment, welding etc.. The techniques can be mechanical or chemical.

b. Passivation

This treatment called also "decontamination" is used to restore the natural passivity of the stainless steel surface eliminating traces of different metal such as carbon steel and preventing the surface to show stains even if in not severe environment.
The use of tools that have machined carbon steels such as grinders or storage in contact with carbon steel can contaminate the stainless steel surface.
To prevent contamination consequences it's necessary to decontaminate the parts; it can be done chemically on the whole surface (immersion) or locally with special paste available on the trade.

13.7 RESISTANCE SPOT WELDING (STITCH WELDING)

Resistance Spot Welding (RSW) is a process by means of which only the base material is molten through direct current passage.
The procedure shall be defined, described and documented as per GENERAL REQUIREMENTS FOR WELDED JOINTS AND UNWELDED MECHANICAL/ELECTRICAL CONNECTIONS with the relevant content.
The Supplier's welder has the job to co-ordinate and provide support in preparing the specimens for assessing the processes and the welding machine, carry out the tests on the welded joints and co-ordinate the welders' activities.

The Supplier should take great care with stainless steel welds to prevent the risk of contamination, in particular the following must be ensured:

- the stainless steel surfaces must be cleaned thoroughly before welding, using special brushes or solvents or pickling agents.

- the electrodes used must be new and used only for this material and constantly controlled for their wear condition.
- the workplace must be free from contaminating agents.

The Supplier must:

- carry out in-process controls and record the results on the daily chart at least two specimen at each production start to verify the core diameter request by drawing)
- check the status of calibration of the test equipment.

The process used for this type of welding is assessed after executing the various welded specimens for each type of shim coupling. All the results obtained will be documented for comparison purposes.
The reference standards are MIL-W-6858 (for carbon and stainless steel) and AWS C1.1 (for aluminium alloys) class c (non-structural), UNI EN ISO 15609-5 if not otherwise specified in the order or contract.
Each test welded specimen shall undergo:

- Inspections and tests including:
  - Visual inspections to check that there is no surface oxidation of the spot, molten marks or marked engravings
  - Macro graphic test to check penetration (percentage of the molten zone) and surface marks.

- Tests including:
  - Tensile strength (Shear Test) to check the average and maximum ultimate tensile strength. Execution of at least 5 specimen (if not otherwise specified). The results obtained must be checked to ascertain that they match the reference tables.
  - Cross Tension Test with execution of at least 5 specimen (if not otherwise specified) to verify:
    - spot dimension after peel test, with reference to the core size
    - the average ultimate tensile strength.

The values obtained must be compared with the reference values to check whether they fall within the acceptability range.
At each start of production execute at least two specimen for Peel Test to verify the core diameter (envisaged in the drawing) in respect to qualification data.
Moreover these tests must be performed whenever:

- the electrodes are replaced
- the welding machine set up conditions have changed
- any element is replaced.

13.8 GENERAL BRAZE-WELDING REQUIREMENTS

Braze-welding must be developed in such a way as to make joints from materials of the same or of a different nature that are resistant to corrosion and vibration.
The Supplier must guarantee the use of qualified processes and operators.

In particular, the following documents must be produced or delivered to OTO MELARA prior to execution of the related activities:

- BPS (Brazing Procedure Specification)
- PQR (Procedure Qualification Record)/BPQR (Brazing Performance Qualification Record).

These documents must be developed in accordance with ANSI /AWS B 2.2 – 91, UNI EN 13134 standards. In carrying out the process, the Supplier must take special care over the following activities:

- cutting and adjustment
- surface cleaning
- application of the welding paste
- support and alignment of the assembly
- heating and fluxing of the welding metal
- Braze-welding execution
- Cleaning and removal of any welding paste residue.

Defects shall be evacuate in accordance with UNI EN ISO 18279.

13.9 REQUIREMENTS FOR MECHANICAL UNWELDED CONNECTIONS (RIVETS, ETC.)

All the indications specified in the drawing must be complied with. Before starting production activities, the list of personnel authorised to perform the process must be provided, with details of the relevant duties and functions (production and control activities). All the equipment used must undergo periodic checks, of which the Supplier must provide suitable evidence.

13.10 REQUIREMENTS FOR WELDING ELECTRONIC COMPONENTS (SOFT SOLDERING)

For the purpose of obtaining the required authorisation, before starting series production, the Supplier must provide OTO MELARA Quality with the documentation required to carry out the manual, surface-mount or wave welding process.
This documentation must include at least the following information:
a) type of alloy and flux used;
b) methods and times for cleaning the welds;
c) procedures for cleaning/painting the printed circuit boards, where applicable;
d) type of solvent and paint, when applicable (for the operations of the previous point).
All this must comply with the provisions set out under the manufacturing procedures **OTO PF-030-01, PF-030-02, PF-050-nn, PF-020-01** for the assembly of components. Moreover, when welding components that are sensitive to electrostatic discharge, the Supplier must provide locations suitable for this type of activity that are in compliance with the provisions set out in OTO MELARA's procedure **PF-040-22**.

13.11 REQUIREMENTS FOR UNWELDED ELECTRICAL CONNECTIONS

For the purpose of obtaining the required authorisation, before starting series production, the Supplier shall provide OTO MELARA Quality with the documentation required to carry out the set welding process; this document must be drawn up in compliance with OTO MELARA's manufacturing procedures **OTO PF-040-nn** and **OTO PF-070-nn**.

14 AMMUNITION

14.1 AMMUNITION AND/OR PARTS THEREOF MADE TO OTO MELARA'S SPECIFICATIONS

The aim of this subsection is to define the quality requirements to be complied with by the Suppliers supplying OTO MELARA with ammunition and/or parts thereof made to OTO MELARA's specifications. If the supply contains parts designed by the Supplier, the PROJECT REQUIREMENTS (see TABLE 9, subsection PROVISIONS TO ADOPT FOR DEVELOPING THE DESIGN IN COMPLIANCE WITH OTO MELARA REQUIREMENTS and SOFTWARE REQUIREMENTS (see TABLE 10, subsection SOFTWARE) shall apply.
In particular, the process validation and control requirements, including quality records, are defined.
Refer to subsection APPLICABILITY above for instructions on how to handle the supply of ammunition.

14.1.1 Quality System Organisation

For the kind of product and relevant activities the Supplier Quality System shall comply with **AQAP-2110 or ISO 9001:2008 (if the supply doesn't contain parts designed by the Supplier) or AQAP-2120 or ISO 9001:2008 (if the supply doesn't contain parts designed by the Supplier).**
In addition, in the event that it is required to supply particular software application packages to be integrated for example in self guiding systems or piloting in flight of "smart ammunitions" designed by OTO MELARA, compliance with AQAP-2210 is required.

14.1.2 Complex/critical products

Within the framework of the supply of ammunition to OTO MELARA the following products are defined as complex/critical:

a. shell blank
b. empty shell
c. charged shell
d. warhead casing
e. charged warhead
f. case
g. igniter
h. propellant
i. fuse or initiators
j. electronics and homing section
k. luminous tracers
l. flash charge
m. sabot
n. explosive charge;
o. complete round
p. transport box.

14.1.3 Manufacturing and control process requirements

14.1.3.1 Manufacturing and control plan

The provisions under subsection MANUFACTURING AND CONTROL PLAN (MCP) shall apply, with the following addition:

a) for each type of supply, when first implementing the relevant manufacturing/control plan, OTO MELARA personnel shall perform a process audit.
b) for each supply, before starting the activities, it is necessary to send to OTO MELARA (possibly together with the Quality Plan) the manufacturing and control time schedule, the chart listing the parts making up the supply, the Product Baseline and all the elements required to ensure trace ability (e.g. the internal job number/sales order number).

All the above must **fully comply with** the manufacturing requirements included in the technical documentations (drawings, special process specifications, ammunition specifications) supplied by OTO MELARA. The manufacturing documents shall also ensure **trace ability** of the ammunition components.

Important note: the test instructions/procedures shall match those specified in the technical documentation supplied by OTO MELARA (ammunition specifications, drawings and part lists, special process specifications). Any acceptance procedures issued by the Supplier shall be presented to OTO MELARA for approval.

Unless specified otherwise on the OTO MELARA's order, the **records** of intermediate and final tests/controls shall be filed and kept **for at least 10 years** from the date of completion of the supply,
This documentation must allow full data **trace ability** of the controls carried out as against those carried out by Sub Suppliers up to the final acceptance test.

14.1.3.2 Test attendance
The Supplier **must** send to OTO MELARA Quality, with a prior notice of at **least 10 working days**, an invitation to attend the test of the object covered by the contract. It will be up to OTO MELARA Quality to request, during the supply, the attendance at any intermediate/final tests of the components.
During these tests, OTO MELARA Quality reserves the faculty to **choose** what components/ammunition are to be tested as **samples**.

14.1.3.3 Final tests
OTO MELARA Quality must attend the final tests when firing a complete cartridge.
A conformity audit must also be performed to check compliance with the test requirements specified in the documents supplied by the Supplier and any Sub Suppliers.

14.1.3.4 Product identification
The products can be identified in compliance with the provisions set out in the technical documentation supplied by OTO MELARA.
Conformity of identification shall be checked by the Supplier's Quality function that shall record the results of this check together with all the test results.

14.1.3.5 Product handling
The products must be handled in compliance with the contract requirements and the applicable provisions of law in order to protect the product and the personnel involved, right from when the material enters the factory throughout all the manufacturing/control stages up until final delivery.

14.1.3.6 Packing and identification (box marking)
The products must be packed in compliance with the requirements set out in the technical documentation supplied by OTO MELARA (OTO MELARA's Specifications, Drawings, and

Purchase Order) and in compliance with the provisions of law. Compliance of the Packing and identification must be verified by the Supplier's Quality function that shall record the results of this check together with all the test results.
Unless already included in the Quality Plan or the applicable documentation, the Supplier must submit to prior approval by OTO MELARA the packing box identification and marking criteria for approval.

14.1.3.7 Despatch to Final Customer

The material cannot be despatched before successful completion of the check of the packaging its marking and identification and the accompanying documents. This compliance shall be verified by the Supplier's Quality function that must record the despatch together with all the test results.

The Supplier can despatch the material in compliance with the order requirements, only after having received **formal authorisation** from OTO MELARA.

The Supplier is responsible for getting the **couriers** to comply with all the rules and regulations regarding ammunition as prescribed by the applicable law or the technical documentation supplied by OTO MELARA Quality .

14.1.3.8 Test documentation and certification of the supply

1) depending on the type of product, the Supplier must make available to OTO MELARA Quality and **supply on request** the following documents:

a) the workshop test recording forms for lot batched and/or serial components (including those supplied by Sub Suppliers)
b) the firing test recording forms for lot batched and/or serial components (e.g. propellant, igniters, cartridge cases, explosive, discharged projectile, charged projectile)
c) the fuse/SAU factory test recording forms
d) the fuse/SAU firing test recording forms
e) the complete cartridge factory test recording forms
f) the complete cartridge firing test recording forms.

This documentation must be filed together with that covering the supply and kept by the Supplier according to the provisions set out in subsection **14.1.3.1.**

2) At the end of the acceptance test of the object covered by the order, the following documents must be sent to OTO MELARA:
a) Certificate of Conformity of the supply, signed by the Quality function or the Head of the company (drawn up in accordance with the form referred to in Annexe B of AQAP-2070)
b) copy of the certificates of conformity of any lot batched components
c) copy of the required test recording forms.
d) identification codes of the products/materials included in the supply containing dangerous substances under the REACH Regulation and the related safety data sheets.

These test and conformity certificates, together with the Quality Plan and the Manufacturing/Control Plan shall be filed and kept by OTO MELARA Quality.

14.1.4 <u>Simple products</u>

Under ammunition, by simple products are meant all those not included in the list of complex/critical products (e.g. spacers or cardboard parts, loose metal parts).

For the simple products, the Supplier shall comply not only with all the points specified above, see subsection APPLICABILITY but also with those below.

14.1.4.1 Quality System Organisation

For the type of activity required by the product to be supplied, the Supplier's Quality System shall comply at least with the **AQAP-2131 or ISO 9001:2008** standards.

14.1.4.2 Production and testing

The activities required to fulfil the requirements specified in the OTO MELARA's order shall be planned over a manufacturing/control cycle. The Supplier shall provide a list of authorised testers by qualification and perform the tests specified according to the procedures supplied by OTO MELARA or processed by the Supplier, according to the technical documentation specified on the order. Objective evidence of these activities must be presented.

Unless specified otherwise on the OTO MELARA's order, the inward, intermediate and final test/control records shall be filed and kept for at least **10 years** from when the supply has been completed.

14.1.4.3 Documentation for the certification of the supply

The following documentation must accompany the material when delivered:

- Original Certificate of Conformity of the supply
- Any other certification specified on the order,
- identification codes of the products/materials included in the supply containing dangerous substances under the REACH Regulation and the related safety data sheets

If the certification specified for the various cases is not attached to the shipping list, the supply will not be accepted and returned to the Supplier at its own expense.

14.1.4.4 Despatch

The material can be despatched only after successful completion of the checks on the packing, identification and accompanying documentation. This conformity must be verified by the Supplier who must record it together with all the other tests.

14.2 STANDARD CATALOGUE AMMUNITION

In this case the Supplier must prove, under its responsibility, the validation of the Supplied Product.
Refer to subsection APPLICABILITY above for instructions on how to handle the supply of standard ammunition.
There are two types of standard catalogue ammunition:

a. Ammunition destined to OTO MELARA's Customers as a supplement to its own supplies
b. Ammunition destined for OTO MELARA tests.

14.2.1 Quality system

For the envisaged activities the Supplier Quality System shall comply with **AQAP-2110/2210 and ISO 9001:2008**.

14.2.2 Ammunition destined to OTO MELARA's Customers

In this case OTO MELARA must monitor the quality of the supplied products. The requirements specified for the ammunition and/or parts thereof produced according to the technical documentation supplied by OTO MELARA shall apply, except for the fact that all the activities are performed under the Supplier's primary responsibility, and OTO MELARA itself monitors the manufacturing/control process.

14.2.2.1 Manufacturing and control plan

The provisions under subsection MANUFACTURING AND CONTROL PLAN (MCP) shall apply in addition to what specified in the previous subsection 14.1.3.1.a/.b.

14.2.2.2 Test attendance

The Supplier **must** send OTO MELARA Quality, with a prior notice of at **least 10 working days**, an invitation to attend the test of the object covered by the contract. It will be up to OTO MELARA Quality to request, during the supply, the attendance at any intermediate/final tests of the components.
During these tests, OTO MELARA Quality reserves the faculty to **choose** what components/ammunition are to be tested as **samples**.

14.2.2.3 Final tests

OTO MELARA Quality shall attend the final tests when firing a complete round.
A conformity audit will also be carried out to check compliance with the test requirements specified in the documents generated by the Supplier and any Sub Suppliers.

14.2.2.4 Handling

The products must be handled in compliance with the contract requirements and the applicable provisions of law in order to protect the product and the personnel involved, right from when the material enters the factory throughout all the manufacturing/control stages up until final delivery.

14.2.2.5 Packing and identification (box marking)

The products must be packed in compliance with the requirements set out in the technical documentation and the provisions of law. Compliance of Packing and identification must be verified by the Supplier's Quality function that must record the results of this check together with all the test results.

14.2.2.6 Despatch to Final Customer

The material must be despatched after successful completion of the checks on the packaging marking and identification and the accompanying documents . This compliance must be verified by the Supplier's Quality function that must record the despatch together with all the test results.

The Supplier must despatch the material in compliance with the order requirements, after having received **formal authorisation** from OTO MELARA.

The Supplier is responsible for getting the **couriers** to comply with all the rules and regulations regarding ammunition as prescribed by the applicable law or the technical documentation supplied by OTO MELARA.

14.2.2.7 Test documentation and certification of the supply

At the end of the acceptance test of the object covered by the order, the following documents must be sent to OTO MELARA:

a) Certificate of Conformity of the supply, signed by the Quality function or the Head of the company (drawn up in accordance with the form referred to in Annexe B of AQAP-2070)

b) copy of the certificates of conformity of any lot batched components

c) copy of the required test recording forms.

d) identification codes of the products/materials included in the supply containing dangerous substances under the REACH Regulation and the related safety data sheets.

These test and conformity certificates, together with the Quality Plan and the Manufacturing/Control Plan shall be filed and kept by OTO MELARA Quality.

14.2.3 <u>Ammunition destined to OTO MELARA tests</u>

In this case the Supplier must ensure under its full responsibility the compliance of the supply. OTO MELARA reserves the right to approve the final test procedure and attend the final tests.

14.2.3.1 Final tests

The tests must be performed in accordance with the procedures approved by OTO MELARA by defining the sampling plan.

OTO MELARA Quality must attend the final tests when firing a complete round.

A conformity audit will also be performed to check compliance with the test requirements specified in the documents generated by the Supplier and any Sub Suppliers.

14.2.3.2 Test attendance

The Supplier **<u>must</u>** send OTO MELARA Quality, with a prior notice of at **least 10 working days**, an invitation to attend the test of the object covered by the contract. During these tests, OTO MELARA Quality reserves the faculty to **choose** the **samples** to test.

14.2.3.3 Product handling

The products must be handled in compliance with the contract requirements and the applicable provisions of law in order to protect the product and the personnel involved, right from when the material enters the factory throughout all the manufacturing/control stages up until final delivery.

14.2.3.4 Packing and identification (box marking)

The products must be packed in compliance with the requirements set out in the technical documentation and the provisions of law. Compliance of Packing and identification must be verified by the Supplier's Quality function that shall record the results of this check together with all the test results.

14.2.3.5 Despatch to the site specified by OTO MELARA

The material must be despatched after successful completion of the checks on the packaging marking and identification and the accompanying documents has been completed successfully. This compliance shall be verified by the Supplier's Quality function that shall record the despatch together with all the test results.

The Supplier shall despatch the material in compliance with the order requirements, after having received **formal authorisation** from OTO MELARA.

The Supplier is responsible for getting the **couriers** to comply with all the rules and regulations regarding ammunition as prescribed by the applicable law or the technical documentation.

14.2.3.6 Test documentation and certification of the supply

At the end of the acceptance test of the object covered by the order, the following documents must be sent to OTO MELARA:

a) Certificate of Conformity of the supply, signed by the Quality function or the Head of the company (drawn up in accordance with the form referred to in Annexe B of AQAP-2070)

b) copy of the certificates of conformity of any lot batched components.

c) identification codes of the products/materials included in the supply containing dangerous substances under the REACH Regulation and the related safety data sheets

These conformity certificates shall be filed and kept by OTO MELARA Quality.

15 USER MANUALS AND SPARE PARTS CATALOGUES

Refer to subsection APPLICABILITY above for instructions on how to handle the supply of user manuals and spare parts catalogues.
This chapter refers to products designed and developed by Suppliers on the base of OTO MELARA requirements.

Note: In case of catalogue products developed by Suppliers the required documentation is the standard one unless otherwise agreed in OTO MELARA's order.

15.1 GENERAL REQUIREMENTS

The Suppliers of plant/systems and equipment shall deliver OTO MELARA Logistic Business Line the structured product documentation for verification and approval so as to include:

a. a general description of the system/plant covered by the supply
b. link with the reference configuration
c. link with maintenance plan
d. functional description of the system/plant within the execution of the job order
e. preventive and scheduled maintenance
f. corrective maintenance
g. setting and adjustments
h. installation
i. trouble shooting
j. overhauling procedure
k. Spare parts catalogue containing the figures, assemblies/subassemblies list and relevant parts (exploded isometric drawings).

15.2 DOCUMENT DEVELOPMENT METHOD

All the above documents must be supplied with the relevant electronic medium and in details:

for manuals

- text — MS Word®
- tables — MS Excel®, Access® (IPC tables)
- image, figures — vectorial (or as an alternative raster)

for spare part catalogues

- development data base — MS Access®
- image, figures — vectorial (or as an alternative raster)

OTO MELARA Logistic Business Line shall provide the information on how to develop the documentation, its contents, layout and editing in the job order specifications.

15.3 PENALTIES

Failure to provide these documents, any delays compared to the set times or incompleteness shall involve penalties that will be ruled by specific items under the Purchase orders and/or Contracts.

16 ACTIVITIES DEVELOPED BY SUPPLIERS AT OTO MELARA

Refer to subsection APPLICABILITY for instructions on how to handle these activities.

16.1 GENERAL

The Suppliers required to carry out activities at OTO MELARA's production lines must strictly comply with the requirements prescribed by:

a. the Purchase Orders/Contracts
b. the applicable law requirements
c. the applicable documentation
d. PSA0001 procedure (Safety procedure for contractors).
e. from the Single Document on the Assessment of Risk from Interference (DUVRI), which must be obtained from OTO MELARA, if not already received as an annex to the contract.

16.2 SUPPLIER'S ORGANISATION AND PERSONNEL

The Supplier must guarantee the continuous presence in the department of a contact person in possession of the necessary qualification and technical skill to create the interface with the person responsible for OTO MELARA. The name of this person shall be formally notified to OTO MELARA Procurement before starting the activities, integrated by his/her up-to-date Curriculum Vitae.
The Supplier must guarantee that the work is carried out by trained and qualified personnel at OTO MELARA's site.
In the field of aeronautical products, the suitability of personnel should be also attested by the Supplier Quality, which, upon request, must provide evidence that the personnel members are trained on the procedures to apply and are aware of them. Such personnel must also be evaluated in advance by the Production and OTO MELARA Quality.

16.3 DEVELOPMENT OF THE ASSIGNED ACTIVITIES

The Supplier undertakes to develop the activities assigned following the established work and control instructions, using equipment that is suitable in terms of class, type and maintenance status. In particular, it cannot use equipment not conforming to the applicable safety law directives.
The activities shall be performed according to the set schedule, and the Supplier must promptly inform OTO MELARA focal point of any difficulty or impediment that may affect such compliance.
When required, Supplier personnel shall fill the progress chart for the work by means of stamps that can be related to the operators.

16.4 OTO MELARA'S CONTROL ON THE SUPPLY

OTO MELARA must inform the Supplier with due notice of the activities it wishes to attend. The Supplier must call OTO MELARA Quality for a meeting at least one day in advance.
It should be noted that the product must be ready available for performing the set control activities at the time of notification to OTO MELARA Quality otherwise OTO MELARA will charge the Supplier any costs due to inactivity of its personnel due to unavailability of the product. The Supplier must present the product to the test by OTO MELARA after having developed the verifications required.
If any non-conformity is found, OTO MELARA personnel is required to issue the relevant "Non-Conformity Report for subcontracted supplies" and the Supplier must take the necessary steps for its solution.

OTO MELARA and its Customers or Representatives can perform Audits on the Supplier's Quality System and the execution of the activities. The Supplier must take the necessary corrective actions within the set times and according to set methods.

17 ACTIVITIES DEVELOPED BY SUPPLIERS AT COMMISSIONING AND SERVICE CENTRES

Refer to subsection APPLICABILITY above for instructions on how to handle these activities.

17.1 GENERAL

The section refers to Suppliers who are required to execute the following activities at service centres:

- commissioning of mounts, launchers or apparatuses
- status verification
- execution of corrective maintenance
- introduction to the agreed modifications or shortfalls
- compilation of failure reports and work sheets, and on-site activity management
- management of non-conformities and direct contact with OTO MELARA representatives for their solution
- reporting of significant malfunctions and problems.

The Supplier draws up and makes available to OTO MELARA the service Quality Plan, which is subdivided into the following sections:

- organisation of on-site structure, with the name of the personnel employed
- method of execution of the activities assigned
- spare parts warehousing method
- relations with OTO MELARA and the end Customer
- operating instruments used.

In case activities are coordinate by OTO MELARA's personnel present at the yard or job sites, the Quality Plan is not requested.

17.2 DOCUMENTS SUPPLIED BY OTO MELARA

The Supplier operating at the job sites normally receives the following documents and is responsible for using them correctly and maintaining them up to date:

- test plan and test procedures for commissioning
- communication of any modifications made
- functional drawings and charts required to introduce modifications
- use and maintenance handbooks and spare parts catalogues
- missing parts list
- spare parts list
- job order development schedule for Supplier's activities
- forms on which to record the activities carried out
- Single Document on the Assessment of Risk from Interference (DUVRI), as applicable.

The Supplier is responsible for promptly reporting any inconsistencies or incompleteness in the above documents.

17.3 DOCUMENTS DRAWN UP OR PRODUCED BY THE SUPPLIER

In case of activities of which the Supplier has complete responsibility, it shall follow what is reported below.

The Quality Plan is the document used by the Supplier to officially state compliance with the provisions specified in subsection 16.1. The plan must be presented to OTO MELARA **within 60 calendar days** of the date on which the Supplier has received the assignment letter or purchase order. The Plan must be submitted by the Supplier for a review should any of the following occur:

- modifications to the dedicated structure
- organizational changes;
- remarks by OTO MELARA following assessment.

For commissioning, the Supplier must make available, **30 days prior to the start of the tests**, a general execution programme in the form of a GANTT chart, showing:

- the test sequence
- the number and type of the personnel involved.

In the event of delay in developing these activities that is attributable to the Supplier, it must present in the program revision the steps it intends to take to solve the problem. Any documents consigned by the Supplier to OTO MELARA unofficially and not explicitly referred to in the contract documents, relating to the types of documents that the Supplier is responsible for issuing, must be considered as application examples and the Supplier may not use them for developing its own activities or referring to them in its documents.

17.4 ORGANISATION OF THE SUPPLIER'S PERSONNEL AND RESOURCES

In case of activities over which the Supplier has complete responsibility, it shall set up a structure comprised of the following:

- a person responsible
- Spare parts management operator
- skilled servicing engineers (maintainers)

The person in charge will have the following tasks:

- co-ordinating the personnel and planning their work
- handling relations with the Customer's personnel present on site
- handling relations with OTO MELARA's personnel
- handling relations with Suppliers for resolving non-conformities, delays in delivery, etc.

The person in charge must provide OTO MELARA in real time, and in the manner established in the Quality Plan, documents detailing the problems occurring with the equipment during operation, regardless of whether or not they are reported by OTO MELARA's Client and the corrective maintenance activity carried out. The person in charge must also answer requests for details from OTO MELARA's personnel or anyone working for it. The name of the person and an up-to-date curriculum must be specified in the Quality Plan. The Supplier must guarantee at OTO MELARA's the use of properly trained and, if necessary, qualified personnel that are able to:

- interpret the technical documentation correctly
- carry out their tasks autonomously
- develop the assigned self-control activities
- highlight any non-conformities in the components received or when performing their tasks
- follow the safety rules in order to prevent risks to him/herself and anyone else present on site.

The Supplier agrees to develop the activities in accordance with legal requirements and with the operating and control instructions and the use and maintenance handbooks, and using equipment that is suitable in terms of class, type and maintenance status.
In particular, the Supplier must not use equipment that does not comply with the current safety directives. The measuring equipment must be calibrated periodically (according to ISO 9001:2008 and ISO 10012), and show evidence of its validity status; furthermore the Supplier must present documentation showing the measurements made.

17.5 SUBCONTRACTED MATERIALS AND SPARE PARTS

Materials subcontracted by OTO MELARA (for modification or integration) or identified as spare parts must be preserved in such a way as to maintain their identification (Withdrawal order) and make sure they do not get damaged. The Supplier must report immediately:

- quantity shortfalls compared to the accompanying documents, and damage to the materials or components received
- any non-conformities found during installation or testing.

17.6 SETTING TO WORK

Setting to work activities is carried out by OTO MELARA's personnel who is responsible for that; in case the Supplier carries out these activities autonomously it shall fill the documentation provided by OTO MELARA.
Setting to work takes place on completion of installation. It involves a series of tests, inspections and controls and ends with provisional delivery of the product to the Customer, provided that the following tests have been passed:

- static tests
- dynamic tests.

17.7 WARRANTY SERVICE

Service activities are normally under the responsibility of OTO MELARA personnel; in case the Supplier carries out these activities autonomously it shall fill the documentation provided by OTO MELARA.
The service activities under warranty, that the Supplier must perform between delivery of the product and expiry of the warranty for each product, include:

- Interventions of repair after failures (corrective maintenance)
- the introduction of modifications and/or variants
- the reporting of major or recurring problems
- the management of faulty products.

The Supplier must also provide the necessary support in the search for solutions and in discussions with the Customer and/or Suppliers in order to make a correct determination of the party responsible for the failure.

17.8 MANAGEMENT OF NON-CONFORMITIES AND FAILURES

Management of non conforming or faulty products is normally carried out by OTO MELARA's personnel who is responsible for that; in case the Supplier carries out these activities autonomously it shall fill the documentation provided by OTO MELARA.
It is the Supplier's responsibility to:

- identify the non-conforming product or the failure by means of an identification tag, before it is placed in a dedicated area in the warehouse, that is physically separate from the area set aside for spare parts
- compile a product failure report on the form supplied by OTO MELARA, providing the information required for a full and correct understanding of the situation found

- handle contacts with the OTO MELARA units and/or the Suppliers' for the return of the product taking care that this is accompanied by the non-conformity report
- send reminders to the OTO MELARA unit and/or the Supplier, if necessary
- check the state of the repaired and/or despatched product and compilation of the failure report
- send the non-conformity documentation to the relevant department (Logistic Business Line).

17.9 INTRODUCTION OF MODIFICATIONS AND FIELD INTERVENTIONS

Modification or variant introduction activity is normally carried out by OTO MELARA's personnel who is responsible for that; in case the Supplier carries out these activities autonomously it shall fill the documentation provided by OTO MELARA.

The Supplier is responsible for introducing the modifications and/or variants required by OTO MELARA. This activity must be:

- developed in accordance with the documentation received (Change Orders, Requests for Technical Modification etc.) received by OTO MELARA, based on the attached or quoted drawings
- performed using the materials received from OTO MELARA
- checked after introduction to verify its operation
- reported to OTO MELARA on the summary sheet signed by the person in charge of the activity (and countersigned by the Customer's representative, if required).

The Supplier must report any major failure/malfunction (generally involving safety or continuity of operation) to OTO MELARA by means of a document called "Repair/Recovery Form", in which he/she must describe the event, when it occurred, the presumed cause and all the information considered necessary to define the situation (including photographs and sketches). Corrective maintenance actions are performed to ensure that operation can be resumed safely and permanently. The Supplier must ensure prompt effective intervention and correct recording thereof in terms of:

- the type of failure/malfunction
- any replaced parts
- the attribution of expenses for RAMS purposes.

The Supplier must guarantee correct management of spare parts in terms of:

- compliance with the established stock levels
- correct storage

In particular, the Supplier must guarantee:

- correct and permanent identification of the spare parts
- the correspondence of spare parts to the certifications produced by the OTO MELARA's Supplier, and F.I.F.O.[127] inventory management, where required
- ambient and physical conditions suitable for the storage of spare parts
- provision of evidence of the control status
- the availability of safety data charts, where applicable
- correct storage of technical documents and certifications sent by the OTO MELARA's Supplier and accompanying the spare parts.

The Supplier must separate the spare parts from non-conforming or faulty products to prevent the risk of wrong pick-ups from the warehouse or shipping. The Supplier must draw up and keep up to date a spare parts list showing the amount of spares in stock for

[127] First In First Out

each type of product. The Supplier is responsible for send reminders to OTO MELARA and its sub Supplier when the level of stocks reaches the minimum.

17.10 CONTROL EFFECTED BY OTO MELARA ON THE ACTIVITIES

OTO MELARA and its Customers or representatives may carry out audits on the effectiveness and efficiency of the Supplier's Quality System. The Supplier must take, when and how specified, all required corrective actions.

17.11 OPERATING INSTRUMENTS

The operating instruments are documents whose compilation and management determine the progress of commissioning activities and the warranty service. These documents must be presented to OTO MELARA as they:

- prove the Supplier's operability, the state of progress of the activities against the time schedule
- allow collecting data for statistical purposes
- document the problems that may arise;
- supply the elements for correct attribution of failures.

The types of documents that the Supplier must use include:

- a form for recording and monitoring the requests for intervention (attached to procedure OTO MELARA PMQ18)
- list of work to be performed;
- sheets of work performed;
- test reports
- situation of changes introduced or to be introduced;
- the repair form (attached to OTO MELARA document OTO-SR-002)
- on-site modification report (attachment B to OTO MELARA document OTO-AT-001)
- intervention report for recording failures and interventions made with measurement of data for availability and reliability (attached to OTO MELARA procedure PMQ18).

18 ATTACHMENTS

18.1 ATTACHMENT 1: VERIFICATION AT SUPPLIER's RECORDING FORM (example)

OTO MELARA
Una Società Finmeccanica

MODULO REGISTRAZIONE VERIFICHE C/O FORNITORI

Attività svolta da:

NOMINATIVO	MATRICOLA	CENTRO	DATA/E USCITA/E

CODICE FORNITORE	DITTA	LOCALITA'	PROVINCIA

TOTALE PERSONALE OTO MELARA SpA IMPEGNATO NELLA VERIFICA _____

COLLAUDO INTERMEDIO ☐ ; COLLAUDO FINALE ☐ ;
AUDIT DI SISTEMA ☐ ; AUDIT DI PRODOTTO ☐ ; ESITO % ☐ ; TOTALE ORE ☐ .

ATTIVITA' PIANIFICATA (ES. SU PFC, PROGRAMMA VERIFICHE ISPETTIVE) ☐ ;
ATTIVITA' NON PROGRAMMATA ☐ necessaria per la seguente causale_____;

- Barrare la tipologia della verifica
- ESITO %: Indicare la percentuale di CONFORMITA' riscontrata nel corso delle attività (Es.: 0, 10, 20,.....,100 %)
- ORE: Indicare il numero di ore totali impiegate per la verifica

DA COMPILARE A SEGUITO DELLE ATTIVITÀ DI COLLAUDO:

Numero Ordine	Posizione Ordine	Numero Disegno	Costruzione	Quantità presentata	Quantità Accettata	Quantità Non Conforme

Motivo della/e Non Conformità:

Note:

Firma del Fornitore	
Firma del Personale OTO Melara SpA	
Firma dell'eventuale Rappresentante del Cliente	

DISTRIBUZIONE:
- AGQ/SQ (sempre, allegandolo al foglio di viaggio)
- Nel caso di collaudi: ☐ Fornitore (da allegare alla distinta di trasporto unitamente agli altri documenti); ☐ Collaudo Ricezione competente; ☐ Gestione Materiali; ☐ Acquisti (nel caso di collaudo con esito negativo).

Modulo Cod.: AQA0019-01 – Archivio/Identificazione File: Rete Aziendale/Proc_Uff/AQA0019-01 (MSW 2003 SP2)

18.2 ATTACHMENT 2: JOB ORDER DOCUMENTATION MANAGEMENT AND CHANGE INTRODUCTION RECORD (example)

	GESTIONE DELLA DOCUMENTAZIONE DI COMMESSA E REGISTRAZIONE DELL'INTRODUZIONE MODIFICHE	Nr. DOC.: REV.: Pag.....di..... DATA:
PRODOTTO:	Nr. ORDINE OTO MELARA.:	COMMESSA INTERNA:

NUMERO DOCUMENTO	TITOLO e/o ARGOMENTO	REV.	Ricevuto da OTO Melara	MATRICE DI DISTRIBUZIONE DOCUMENTAZIONE						Punto Introduz. Modifica Segnalato da OTO Melara	Regi-strazione introdu-zione Modifica
				Interna					Esterna		
			Data	Data	Ufficio Tecnico	Contr. Qualità	Produ-zione	Acqu-sti	Nome sub-fornitore		

APPROVAZIONE	GESTORE DELLA DOCUMENTAZIONE CONTRATTUALE

18.3 ATTACHMENT 3: MANUFACTURING AND CONTROL FORM

18.3.1 Drawing up guidance

Reference on the form	Explication
1	Name of the firm that issue the MCP
2	OTO MELARA order to which the MCP refers
3	MCP number
4	Revision index and relevant date
5	Internal job order assigned to the activities
6	Page and total pages numbers of MCP
7	Supplied product description
8	Drawing and revision index numbers
9	Quantity in case of non-serialized products or S/N in case of serialized products
10	Progressive number of manufacturing and control stage
11	Manufacturing and Control stage description; filled also with sub supplied activities indicating sub Supplier name.
12	Reference Documentation Code (including revision index) to carry out the planned activities at the stage (i.e.: manufacturing cycle code, applicable WPS number, applicable test procedure code)
13	Record the type of control to be executed (i.e.: functional, visual, dimensional, etc.) and the percentage of item to check
14	Declaration of completion of the stage (signature of the responsible personnel)
15	Definition of intervention points of QA of the Supplier, of the Customer (OTO Melara), of the final Customer to be associated to phases (stages) classification
16	Phase Classification: **H:** hold point **W:** witness point **R:** recoding/report
17	Control phase execution date
18	Inspector signature
19	Number of the document issued for the specific phase (i.e.: test report, certificate of conformity, etc.)
20	Record possible notes and reference of non-conformity report or deviation
21	Approval signatures (at list of the Supplier QA responsible)

18.3.2 Form example

(1)	PIANO FABBRICAZIONE E CONTROLLO	ORDINE: (2)	PFC N°: (3) Rif. Commessa interna: (5)	Rev. (4) Del Pag. (6) di

PRODOTTO DI FORNITURA: (7) DISEGNO: REV. (8) QUANTITÀ: NUMERO DI SERIE: (9)

FASE N.° (10)	FABBRICAZIONE E CONTROLLO (11)	DOCUMENTO DI RIFERIMENTO (12)	CONTROLLO (13)		ATTESTAZIONE DELLA FASE DA PARTE DEL FORNITORE (14)	ENTE DI INTERVENTO: (15)										N.°CERT. (19)	NOTE (20)
			TIPO	%		QUALITÀ FORNITORE		(16)	(17) (18)	CLIENTE		(16)	(17) (18)	CLIENTE FINALE			

APPROVAZIONE (21)	QUALITÀ FORNITORE	OTO MELARA	CLIENTE FINALE (QUANDO PREVISTO)

18.4 ATTACHMENT 4: CERTIFICATE OF CONFORMITY (FORM)

18.4.1 Drawing up Guidance

Reference on the form	Explication
1	Purchaser Name (in this case OTO MELARA SpA)
2	OTO MELARA order n° and relevant variants if any
3	Government Contract reference (only when is mentioned in OTO MELARA order)
4	Name of the Certificate of Conformity addressee (for example : OTO MELARA site of La Spezia or site of Brescia)
5	Supplier that issues the Certificate of conformity data and production facility address
6a	Name of the addressee of the material (only if different from the Certificate of Conformity addressee)
6b	Reference of Transport Document with the warning to indicate, by ticking the appropriate box, if it is a partial or complete delivery
7	Declaration of conformity to be signed by Supplier entitled person
8	Progressive Number in OTO MELARA order
9	Supply description
10	Supply Quantity
11	Packages number
12	Supply Quantity still to be delivered in respect to total quantity
13	Quantity already supplied in respect to total quantity
14	When required, fill the form with the requested data, indicating e.g. requests for concession/ waiver which may be issued, if approved by OTO MELARA

18.4.2 Form example

CERTIFICATO DI CONFORMITÀ ,		N°: Pag. 1 di pagine……			
1. Acquirente:		2. Riferimento e data dell'Ordine e successive varianti:			
3. Contratto Governativo n.:					
4. Trasmesso a:		6a. Materiale Spedito a (Destinatario)			
5. Ragione sociale del Fornitore che emette il Certificato ed indirizzo dell'Unità produttiva		6b. Numero e data del documento di trasporto Spedizione Parziale Spedizione Finale			
7. Si certifica che, a meno delle deroghe/concessioni riportate nella casella 14, la totalità delle forniture sotto elencate (o dei servizi sotto elencati) è su tutti gli aspetti conforme alla/e specifica/specifiche, al/ai disegno/i ed al relativo ordine sopra riportato e che le forniture sono state ispezionate e provate in accordo con le condizioni ed i requisiti dell'ordine. Data Firma della persona abilitata (Fornitore) Nome e titolo (timbro)					
8. Voce dell'Ordine	9. Denominazione, Numero di Disegno / Part Number comprensivo di indice di revisione, numero di serie o lotto	10. Quantità della fornitura	11. Numero Imballaggio	12. Quantità ancora da consegnare	13. Quantità Montante Spedita
14. Note: - Piano della Qualità - numero di protocollo/rev.: - Piano di Fabbricazione e Controllo - numero di protocollo/rev.: - Elenco Deroghe/Concessioni: - Eventuali parti mancanti rispetto la configurazione del prodotto finito: - Elenco certificazioni allegate: - FAI (First Article Inspection) Report - numero di protocollo e relativa data:					
Continuare la lista su pagine separate se necessario richiamando come riferimento il numero di Certificato di Conformità					

Rif.: Rete Aziendale/Proc_Uff/RQA0001-04_Allegato 4_CoC (MSW 2010)

18.5 ATTACHMENT 5: WELDING PROCEDURE SPECIFICATION FORM

	MANUFACTURER'S WELDING *PROCEDURE SPECIFICATION (WPS)* *PROCEDURA DI SALDATURA*	WPS-N. /*PROC. N.*_____ Date/*Data* _____ Supp. WPAR N./WPAR di supp_____

Welding Process *Processo di Saldatura* _____ Type / *Tipo* _____ JOINT / *GIUNTI* Joint Type /*Tipo di Giunto* _____ Backing / *Sostegno* _____ Weld preparation / *Preparazione* _____ PARENT MATERIAL / *MATERIALE BASE* Group.No./*Gruppo*___/____ to/*al* Group.No /*Gruppo* ___/_____ Spec. Type & Grade to/ *con* _____ _____ *Specif. Tipo e Grado* _____ _____ Thickness /*Spessore* _____ WELDING CONSUMABLE / *MATERIALE D'APPORTO* Specification No./ *Norma No.* _____ AWS Designation / *Classificazione AWS* _____ Size / *Dimensioni* _____ Manufacturer / *Costruttore* _____	Joint Design and Welding Sequences *Schizzo del Giunto e Sequenze di Saldatura*
WELDING POSITION / *POSIZIONE DI SALDATURA* Position / *Posizione* Welding Progression / *Progressione di saldatura*	
PREHEAT /PRERISCALDO Preheat Temp. / *Temperatura di preriscaldo (°C)* Interpass Temp / *Temperatura di interpasso (°C)*	

GAS(ES) / *GAS*

	Percent Composition / *Composizione %*			
	Gas(es) *Gas*	Mixture *Miscela*	Flow Rate *Portata*	
Shielding / *Protezione*				l/min.
Trailing / *Aggiuntivo*				l/min.

TECHNIQUE / *TECNICA* String or Weave Beads / *Cordoni stretti o larghi* Multiple or Single Pass / *Passata singola o multipla (per lato)*	

Layer(s) *Passate*	Welding Process *Processo di saldatura*	Filler metal / Electrode size *Materiale apporto/ Dimensioni* mm.	Current Corrente		Voltage *Tensione*	Travel speed *Velocità Saldatura*	Heat imput *Apporto termico*
			Type & Polarity *Tipo e Polarità*	Amperes A	V	mm./ min.	Kj / mm.

MANUFACTURER / *COSTRUTTORE*

APPROVAL / *APPROVAZIONE*