CODE: **PQA009-L-IT-D en rev. 02**

DATE: **04/11/2022**

DOCUMENT TYPE: **POLICY**

APPLICABILITY: **Defence Systems Business Unit**

Quality Requirements for Supplies of Ammunition, Exploding Devices and Weapons

SUMMARY:

This document defines the specific quality requirements to be met by Leonardo-SDI suppliers when supplying ammunition materials, exploding devices and weapons or parts thereof.

General quality requirements for supplies to Leonardo-SDI are defined in PQA004-L-IT-D.

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For conformance to original Italian edition

Date: 2022/11/04

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AMENDMENT RECORD

Rev.	Date	Proposal no.	Description	Authors
00	15/03/2018	-	First issue	G. Bicci, G. Gasparini, C. Pagni
01	22/10/2018	056	Whole document: updated ref. to UNI EN 9100:2018; Para. 2.1: Removed notes for applicability of AQAP-2110, EN-9100, ISO-9001; Para. 5.2: Removed chance for the acceptance test procedures are issued by suppliers and approved by Leonardo-SDI. Para. 5.5: Paragraph rephrased and the following requirements added: Acceptance Test procedures are issued by Leonardo-SDI; Leonardo-SDI's customers may witness acceptance testing activities; Leonardo-SDI will man the trials for the final firing testing; the acceptance test results shall be recorded and maintained. Para. 7.2.2 / 7.2.3: Paragraphs rephrased; requirements added for: issue and approval of acceptance test procedures; involvement of Leonardo-SDI's customers in acceptance tests, recording the acceptance test results. Para. 7.3.1 / 7.3.2: Paragraphs rephrased; requirement added for recording the acceptance test results. Para. 8.3: Requirement added for recording the acceptance test results.	C. Pagni

Rev.	Date	Proposal no.	Description	Authors
02	04/11/2022	748	Whole document (changes not traced): Changed document code as per new BMS standard - Changed template to QUA049-T-IT-D rev. 03 - Changed "Division" to "Business Unit" - Updated ref. to new BMS codes (e.g., PQA004-L -→ PQA004-L-IT-D) - Changed "Classification Index (CI)" to "RQF Code" – Some minor text shifts are not traced; Para. 1.2 – Added requirements priority; Para. 1.3 - Changed title; Changed description of RQF=E2; Former RQF=E2 renamed to RQF=E5; Para. 2 - Updated Referenced Documents (2.1) and Templates (2.2) Para.. 3 - Added Definitions (3.1); upgraded Acronyms (3.2); Para. 4.1 (new) - Added reqs for transport of dangerous goods (ADR); Para. 5 - Updated reqs for RQF=E1: Quality System (5.1); Manufacturing Planning and Control (5.2); FAI (5.3); Notification of acceptance test (5.5); Packaging (5.8); Documentation and Certification (5.9); Shipping (5.10); Para. 6 (new): Specified reqs for *"Ammunition and Exploding Devices/Important Products* (RQF=E2)" - Former contents of para. 6 moved to para. 9; Para. 7: Updated reqs for RQF=E3: Notification of acceptance test (7.2.3) (7.3.2); Documentation and Certification (7.2.6) (7.3.6); Packaging (7.2.5) (7.3.4); Shipping (7.2.7) (7.3.5); Para. 8: Updated reqs for RQF=E4: Notification of acceptance test (8.3); Packaging (8.5); Shipping (8.6); Documentation and Certification (8.7); Para. 9 (new) - Reqs for "Ammunition and Exploding Devices/ Simple Products (RQF=E5)" moved here - Updated reqs for Documentation and Certification (9.3) and Shipment (9.4); Para. 10 (new) - Added Table of documents to be supplied (10.1) and Documents required by legal regulations (10.2); Appendix A - Added concept of "representative sample" (A.1.1); Better specified some reqs for the FAI (A.3) and filling FAI Forms (A.4.6).	C. Pagni G. Bicci

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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to define the quality requirements to be met by suppliers of ammunition, exploding devices and weapons or parts thereof, in supplies to Leonardo-SDI.

More general quality requirements applicable to all supplies are specified in the PQA004-L-IT-D[1]

1.2 Applicability

This document applies to **Type E** supplies as identified in PQA004-L-IT-D, (ammunition, exploding devices and weapons, custom-made in accordance with the technical documentation provided by Leonardo-SDI or available in the supplier catalogue).

If software, parts or products designed by the Supplier are included in the supply, the quality requirements specified in PQA010-L-IT-D (Design and Development) and PQA011-L-IT-D (Software Development) apply.

In the event of conflicts between this document and the current legal regulations, the latter take priority; followed by the requirements of the Purchase Order (and attached documents), and finally the requirements specified in this document.

1.3 RQF Code

As provided in PQA004-L-IT-D, each *"supply class"* is characterized not only by its Type but also by a numerical index (Classification Index), that depends on the characteristics and level of complexity of the supplied products/services.

These two parameters are summarized in the RQF Code, which is given in the Purchase Order for each PO Line and allows the applicable quality requirements to be identified in this document, including the activities to be carried out and the documents to be produced.

RQF Code = < Type > + < Classification Index >

Example: ***RQF = E3*** *indicates supply of* Ammunition/Exploding Devices *(Type E),* selected from the supplier's Standard Catalogue *(Index = 3).*

The following table shows the product characteristics for possible RQF values. The related activities and documents required from the supplier are described in the following paragraphs.

RQF	Characteristics of the supply
E1	Ammunition / Exploding Devices – Complex/Critical products, produced against Leonardo-SDI technical documentation
E2	Ammunition / Exploding devices – Important products, produced against Leonardo-SDI technical documentation
E3	Ammunition/Exploding devices - Standard catalogue products
E4	Weapons or weapon parts - Standard catalogue products
E5	Ammunition/Exploding devices - Simple products, produced against Leonardo-SDI technical documentation

Table 1 - RQF codes for supplies of Ammunition, Exploding devices and Weapons

[1] The PQA004-L-IT-D document and all other supply quality requirements, defined in specific PQAxxx-L documents, are available on the Leonardo S.p.a. Supplier Portal.

2 REFERENCES

2.1 Documents

Ref.	Code	Title
Contractual (applicable when required by the PO or Contract)		
D1.	AER(EP).P-145	Requirements for Maintenance Organisations
D2.	AQAP 2110 ed. D	NATO Quality Assurance Requirements for Design, Development and Production
D3.	AQAP 2210 ed. A	NATO supplementary Software Quality Assurance Requirements to AQAP-2110 or AQAP 2310.
D4.	AQAP-2310 ed. B	NATO Quality management system requirements for aviation, space and defence suppliers
D5.	UNI EN 9100:2018	Quality Management Systems-Requirements for Aviation, Space and Defense Organizations.
D6.	UNI EN 9102:2016	Quality Systems - First Article Inspection
D7.	UNI EN 9115:2018	Quality Management Systems - Requirements for aeronautics, space and defense organizations - Deliverable software (Supplement to UNI EN 9100)
D8.	UNI EN ISO 3834:2006	Quality requirements for fusion welding of metallic materials
D9.	UNI EN ISO 9001:2015	Quality Management System – Requirements.
D10.	ISO/IEC 17025:2005	General requirements for the competence of testing and calibration laboratories
International Reference Standards		
D11.	ACMP 2100	Configuration Management Contractual Requirements.
D12.	AQAP 2070	NATO Mutual Government Quality Assurance (GQA) Process
D13.	AQAP 2105	NATO Requirements for deliverable Quality Plans
D14.	UNI ISO 10005:2019	Quality Management System - Guidelines for quality plans
D15.	UNI ISO 10007:2017	Quality Management System - Guidelines for configuration management
D16.	UNI EN ISO 10012:2004	Measurement Management Systems – Requirements for measurement processes and measuring equipment.
D17.	ISO 10013:2001	Guidelines for quality management system documentation
D18.	UNI EN ISO 19011:2018	Guidelines for auditing management systems
D19.	SAE AS9102	Aerospace First Article Inspection Requirement
D20.	STANAG 4107	Mutual Acceptance of Government Quality Assurance and usage of the Allied Quality Assurance Publications (AQAP)
D21.	STANAG 4123	Determination of classification of military ammunition and explosives
D22.	STANREC 4427	Configuration Management in System Life Cycle Management
D23.	UNI EN/AS 9102	Quality Systems - First Article Inspection
D24.	AASTP-3	Manual of NATO Safety Principles for the Hazard Classification of Military Ammunition and Explosives

Ref.	Code	Title
Mandatory Requirements[2]		
D25.	---	Finmeccanica – Leonardo Organizational, Management and Control Model pursuant to Legislative Decree no. 231, 8 June 2001
D26.	---	Finmeccanica- Leonardo Group Code of Ethics and Anti-Corruption Code
D27.	---	Consolidated Law on Health and Safety in the Workplace, Legislative Decree 81 of 9 April 2008 as amended
D28.	---	Royal Decree-Law 262 of 16 March 1942, as amended, and integrations 'CIVIL CODE', in particular Book IV - Title III.
D29.	---	Law 192 of 18 June 1998 and Legislative Decree 231 of 9 October 2002, Rules on Subcontracting
D30.	---	Regulation (EU) No 1907/2006 of the European Parliament and of the Council of 18 December 2006
D31.	---	Regulation (EC) n. 1907/2006 of 18 December 2006 of the European Parliament and of Council concerning the registration, evaluation, the authorization and restriction of chemical substances and subsequent amendments (REACH Regulation).
D32.	---	Directive 2011/65 / EU of 8 June 2011 of the European Parliament and of Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) and subsequent amendments - (RoHS Directive).
D33.	---	Regulation (EC) n. 1272/2008 of 16 December 2008 of the European Parliament and of Council on classification, labeling and packaging of substances and mixtures which modifies and repeals directives 67/548/EEC and 1999/45/EC and amends the (EC) regulation n. 1907/2006 (Text with EEA relevance) and subsequent amendments - (CLP Regulation)
D34.	---	Royal Decree 773/31 of June 18, 1931 and subsequent updates - Consolidated Law on Public Security (TULPS)
Internal Reference Documentation		
D35.	PQA004-L-IT-D	Quality Requirements for Supplies to the Defence Systems Business Unit of Leonardo S.p.A.
D36.	PQA008-L-IT-D	Quality requirements for the Supply of Special Processes
D37.	PQA010-L-IT-D	Quality Requirements for the supply of Design and Development
D38.	PQA011-L-IT-D	Quality Requirements for the supply of Software Design and Development
D39.	QUA017-T-IT-D	List of approved suppliers of Special Processes/NDT and their sub-tier supply chain
D40.	IND005-T	Industrial Engineering Documentation (IE Documentation) - Filling by suppliers.

[2] Any mandatory requirements may be stated in the SO.

2.2 Template/Form/Checklist

Rif.	Codice	Titolo
T1.	Form 1, EN9102	Part Number Accountability https://www.sae.org/aaqg/publications/as9102af1.doc
T2.	Form 2, EN9102	Product Accountability *(Raw Material, Specifications and Special Process(es), Functional Testing)* https://www.sae.org/aaqg/publications/as9102af2.doc
T3.	Form 3, EN9102	Characteristic Accountability *(Verification and Compatibility Evaluation)* https://www.sae.org/aaqg/publications/as9102af3.doc
T4.	CFM103-T-IT-D	Template for the suppliers' Configuration Management Plan
T5.	PQA049-T-IT-D	Template for the suppliers' Quality Plan
T6.	RKM004-T-IT-D	Template for the suppliers' Risk Management Plan
T7.	---	Leonardo Spa form for REACH Declaration (available on the Leonardo S.p.a. supplier portal)
T8.	PRG651-T-IT-D	Template for ROHS Certificate.

3 DEFINITIONS AND ACRONYMS

3.1 Definitions

Definition	Description
Airworthiness	The ability of an Aircraft or other avionics system / equipment to operate in flight and on the ground without significant risk to the crew, ground personnel, passengers (as applicable) or other third parties.
Design Authority (D.A.)	This means the technical responsibility for the design. For supplies requiring the design phase by the supplier, the Design Authority is the supplier's. He is responsible for clarifying and defining, as best he can, all the elements necessary for the definition and implementation of the activities entrusted to him. Leonardo-SDI is responsible for communicating the requirements against which to carry out the Design should be produced, and will therefore provide a Technical Specification and a Supply Specification attached to the PO.
FAI	A complete, independent and documented physical and functional verification process to confirm that the production methods adopted have produced an acceptable item as specified in the drawings, purchase order, technical specifications and/or other applicable documents.
Fit, Form and Function (3F or FFF)	Fit, Form and Function (3F or FFF) define the identifying characteristics of a part. If the Fit, Form and Function requirements of two parts are identical, then the parts are interchangeable.
Supplier	The company that undertakes to build goods and/or carry out work and/or perform services that Leonardo S.p.A. Defence Systems Business Unit requests in writing through orders, purchase contracts or contracts, in compliance with the technical, quality and supply specifications attached and the contractual obligations indicated.
Purchase Order and Framework Agreement	Written agreement, signed by Leonardo SpA Defence Systems Business Unit and the Supplier for the purpose of establishing, regulating or extinguishing a legal relationship of a financial nature, for corresponding services (obligations to give and/or do)
Manufacturing and Control Plan (MCP)	The Manufacturing and Control Plan (MCP) is the summary document that represents the sequential planning of the manufacturing activities and controls to be carried out. It specifies the methods of execution and the associated responsibilities, parameters to be recorded, and the acceptance criteria..
Prototype	Product, system, subsystem, assembly, part, intended for use in: • Experimentation with design choices and • Verification/Validation of the Design by Engineering • Definition of the Manufacturing and Control documents and of the Production Line in Concurrent Engineering by Production Examples: assembly of mechanical components, or an assembly of electrical/electronic components, wiring harness, etc.
Technical Specification	This is the tool by which the essential technical requirements are transmitted to the Supplier in order to allow for the supply to be produced independently; this document is constituted of technical drawings, descriptions for uniquely defining the supply, its requirements and its verification and testing methods.
Experimentation	Experimental activity for evaluation of design choices

Definition	Description
Statement of Work (SOW) or Supply Specification	This is the instrument with which the activities to be carried out and the organizational methodologies required are transmitted to the Supplier so that it can comply with the applicable obligations of the supply. In particular: – it defines the activities that shall be carried out, the contractual supplies, the organizational methodologies required to carry out the activities, the Reviews and Audits, the plan, the specific quality requirements for that order and the standards to be complied with (except for the minimum legal requirements to always be complied with), the supply documentation requirements, the requests for particular documentary and procedural standards. – it avoids ambiguities and conflicts of authority.
Prototype status	Status on the configuration management system that allows the acquisition of prototypes only for the purposes indicated in the definition (see Prototype)
Validation	Confirmation supported by objective evidence that the requirements relating to a specific intended use or application have been met
Verification	Confirmation supported by objective evidence that specified requirements have been met

Other definitions are provided in par. B2 "FAI Glossary."

3.2 Acronyms

Acronym	Description
AASTP	Allied Ammunition Storage and Transport Publication
ADN	Accord Européen Relatif au Transport International des Marchandises Dangereuses par Voies de Navigation Intérieures. *(European Agreement concerning the Transport of Dangerous Goods by Inland Waterways)*
ADR	Accord Dangereuses Route *(European Agreement concerning the Transport of Dangerous Goods by Road)*
AQAP	Allied Quality Assurance Publication
COC	Certificate of Conformity
COTS	Commercial Off The Shelf
CLP	Classification Labelling and Packaging (EU Regulation No.1272/2008)
NDI	Non-Destructive Inspection
D.A.	Design Authority
FAI	First Article Inspection
FAIR	First Article Ispection Report
GQA	Government Quality Assurance
GQAR	Government Quality Assurance Representative
HW	Hardware
ICAO-TI	Technical Instructions for Safe Transport of Dangerous Goods by Air

Acronym	Description
IMDG	International Maritime Dangerous Goods Code
ISO	International Standardization Organization
ITAR	International Traffic in Arms Regulations
NATO	North Atlantic Treaty Organization
PO	Purchase Order
MCP	Manufacturing & Control Plan
PRR	Production Readiness Review
REACH	Registration, Evaluation, Authorization and restriction of CHemicals" (EU Regulation No. 1907/2006)
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses *(European Agreement Concerning the Transport of Dangerous Goods by Rail)*
ROHS	Restriction of Hazardous Substances EU Directive (direttiva 2011/65/UE)
RQF	Requisito Qualità Forniture *(Supply Quality Requirements)*
SAU	Safety and Arming Unit
SDI	Sistemi di Difesa *(Defence Systems)*
SDS	Safety Data Sheet
STANAG	Standardization Agreement
SW	Software
SVHC	Substance of Very High Concern

4 GENERAL REQUIREMENTS

The following requirements specified in PQA004-L-IT-D apply:

- Supplier evaluation and monitoring;
- Transmission of supply requirements;
- Leonardo-SDI interfaces with the Supplier;
- Documentation;
- Determining and reviewing requirements;
- Design and Development (where applicable)
- Subcontract management;
- Identification and traceability;
- Configuration Management;
- Control of nonconforming products;
- Product preservation
- Management of materials belonging to Leonardo-SDI

In case of conflict between this document and PQA004-L-IT-D, the requirements of this document shall prevail.

4.1 Requirements for the transport of dangerous goods (ADR, IMDG, ICAO, RID, ADN)

Transport of hazardous materials shall be conducted in accordance with the requirements set forth in the purchase order and the requirements of the applicable regulations:

- ADR Road transport;
- RID Rail transport;
- ADN Inland waterway transport;
- IMDG Code Maritime transport;
- ICAO Technical instruction Air transport.

Supplies of hazardous materials shall be delivered in packages meeting the requirements of ADR 6.1 "Provisions for the construction and testing of packages" and alternatively the requirements of IMDG 6.1 "Provisions for the construction and testing of packages", and accompanied by the relevant certification issued by the Authorized Body that carried out the tests.

In addition to the usual shipping documents, the following documentation shall also be attached to the supply:

- Certificate of classification of the commodity with attribution, according to the UN rubrics, of the UN No. and the relevant Classification Code of the substance or object issued by a laboratory, agency, institute, or by the manufacturer himself who has carried out the tests provided for in the Manual of Tests and Criteria, Section 14 (Series 4 Tests) and Section 16 (Series 6 Tests). Performance of the Series 6 tests is not required if the manufacturer assigns the explosive substance or object to Hazard Division 1.1 for which only the Series 4 tests are required.
- Recognition of the explosive substance or object by the Ministry of the Interior pursuant to Art. 53 of Royal Decree 773/31. Recognition is not necessary if for the explosive material (only) has been issued an "EC Type Certificate" by a Notified Body in accordance with Directive 93/15/EEC.
- Certificate of approval of the packaging in accordance with ADR Part 6 issued by a certification body authorized by the Competent Authority to carry out the required tests.
- Certificate of Recognition/Classification to Transport, issued by recognized Military Authorities/Institutes within NATO, in accordance with STANAG 4123 and AASTP-3 documents (if available);
- Product Safety Data Sheet (SDS).

5 AMMUNITION AND EXPLODING DEVICES - COMPLEX/CRITICAL PRODUCTS (RQF = E1)

This paragraph applies to supplies of custom-made Ammunition and Exploding Devices (Complex/Critical products) produced against Leonardo-SDI technical documentation.

In the above scope, the following products are defined as complex/critical[3]:

a. Blank projectile;
b. Empty projectile;
c. Loaded projectile;
d. Loaded warhead;
e. Cartridge case;
f. Primer;
g. Gun Propellant;
h. Fuse or Igniter (SQUIB);
i. SAU
j. Light tails (tracers);
k. Electronics and homing section (of munitions);
l. Flash charge;
m. Sabot;
n. Explosive charge;
o. Complete cartridge;
p. Containers and transport cases.

5.1 Quality System Organization

The supplier shall implement and maintain throughout the duration of the supply a Quality System in accordance with ISO 9001:2015.

The supplier's Quality System shall incorporate, where applicable, the additional requirements of UNI EN 9100:2018 and the specific requirements of publications AQAP-2110 (with particular reference to configuration management aspects), AQAP-2310 (for aeronautical products), AQAP-2210 and UNI EN 9115 (for software to be integrated in Leonardo-SDI products such as self-homing or in-flight piloting systems of "*smart ammunitions*").

5.2 Manufacturing planning and control

The supplier shall plan and implement a suitable control system to provide evidence of the activities performed to produce the supplied products under controlled conditions.

Before starting works, the supplier shall send to Leonardo-SDI: the Quality Plan, the time schedule of the activities (GANTT), the Risk Management Plan, the Configuration Management Plan, the Supply Batching Plan.

The production process shall be defined in a Manufacturing and Control Plan (MCP) that shows the sequential stages of product realization by identifying: external procured parts, incoming tests, internal and external manufacturing activities, points of controls to be performed with or without the presence of Leonardo-SDI, and that provides for the recording of controls applied.

The MCP shall be supplemented with Work Cycles and Instructions/Procedures for product manufacture, assembly and inspection/verification, including criteria for final acceptance.

The supplier shall submit the MCP to Leonardo-SDI for approval in cases where the Business Unit holds the Industrial Property of the product.

[3] Non-exhaustive list

It is the supplier's responsibility to ensure the availability of suitable equipment, means and personnel for the manufacture of the required products, as well as for meeting the contractual deadlines.

At the end of manufacturing, the supplier shall collect in an appropriate End of Manufacturing Dossier the necessary records to give evidence that the manufacturing process has been properly applied.

In the case of complete ammunition supply, the manufacturing documentation shall ensure traceability of the ammunition components and meet the manufacturing requirements specified in Leonardo-SDI technical documents (drawings, special process specifications, ammunition technical specifications, … etc.)

For supplies of complete ammunition, when the MCP is first applied, Leonardo-SDI will conduct an audit of the supplier's manufacturing process.

Leonardo-SDI reserves the right to carry out controls of the production processes or outputs at the supplier’s premises during the course of the supply.

All records of incoming, intermediate, and final tests/inspections shall be archived and maintained by the supplier for at least 10 years after completion of supply, unless otherwise specified in the order. This documentation shall ensure traceability of all data pertaining to controls performed on the product, including those of subcontractors and those related to final acceptance testing.

Note: All applicable acceptance testing instructions/procedures shall be those provided in the Leonardo-SDI technical documentation (ammunition technical specifications, drawings, bills of materials, special process specifications, … etc.).

5.3 Validation of production processes (FAI)

In the case of a production process implemented for the first time, if required by PO, the supplier shall perform a verification of that process on the first item produced or the first production run (First Article Inspection).

The verification involves an inspection by Leonardo-SDI, as described in Appendix A.

The FAI shall be repeated if a suspension of the manufacturing process has occurred for 2 years or more since the last production run.

Records related to the FAI shall be made in accordance with Appendix A of this document.

5.4 Special Processes

When the manufacturing activities involve application of *special processes*, the requirements specified in PQA008-L apply.

5.5 Manufacturing and Acceptance Test

Supplier’s Manufacturing Test

During the course of the supply Leonardo SDI, on request, shall be allowed to attend the supplier’s intermediate/final manufacturing tests of contract items and/or their components, and in that case shall be entitled to select the sample to be submitted for testing.

Notification of Acceptance Test

The supplier shall invite Leonardo-SDI to attend acceptance test of the supplied product, at least 10 working days in advance of the scheduled date.

The notice shall be accompanied by the Certificate of Conformity (a filled out facsimile for Leonardo-SDI's approval) and all required documentation, in accordance with the directions of PQA004-L-IT-D and this PQA009-L-IT-D.

Acceptance Testing

Leonardo-SDI (and its customer as applicable) will attend final acceptance testing.

Acceptance tests will be conducted in accordance with documents issued by Leonardo-SDI (instructions, procedures or test sheets). Leonardo-SDI reserves the right to select the sample components/munitions submitted to tests.

As a part of the acceptance test, an audit shall be conducted to verify product compliance with the requirements of the supplier's (and any subcontractors') internal testing documentation.

Tests for final firing testing will always be manned by Leonardo-SDI personnel.

Records and Non-Conformities

The results of the final manufacturing and acceptance tests shall be recorded and retained by the supplier in accordance with the indications in PQA004-L-IT-D.

Any non-conformities detected during the manufacturing or acceptance testing shall be recorded and managed by the supplier in accordance with PQA004-L-IT-D indications. Nonconforming products shall be re-submitted to Leonardo-SDI after a documented analysis has been carried out and adequate corrective actions applied.

5.6 Product identification

The products shall be identified in accordance with the technical documentation provided by Leonardo-SDI.

Conformity of the products identification to the applicable requirements shall be verified by the Supplier's Quality and recorded along with all other final testing results.

5.7 Handling

In order to safeguard both the product and the personnel involved, all products shall be handled in compliance with contractual requirements and applicable legal regulations, from entry into the plant and through all stages of manufacture/control, up to delivery.

5.8 Packaging and relevant identification (marking cases)

Packaging of products shall be carried out in accordance with the requirements given in the purchase order and attached technical documentation, the provisions at Para. 4.1 of this document, and the applicable legal regulations concerning cases and their identification.

The conformity of the packaging and its identification to the applicable requirements shall be verified by the Supplier's Quality and recorded along with all other final test results.

The Supplier shall define on the Quality Plan (or other applicable document) and submit to Leonardo-SDI for approval, the criteria for package/case identification and marking.

5.9 Supply documentation and certification

Upon delivery, the supply shall be accompanied by Certificate of Conformity issued by the supplier in accordance with the directions of PQA004-L-IT-D.

Depending on their RQF Code indicated in the purchase order, the supplied products shall be manufactured and delivered with the related documentation in accordance with Table 2 at para. 10.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

All documentation related to the supply shall be stored and retained by the Supplier in accordance with Section 5.2 above.

5.10 Shipping to Leonardo-SDI's site or its end customer

The supplied material shall be shipped after verification of packaging, package identification and accompanying documentation has been successfully completed. Compliance shall be verified by the Supplier's Quality and recorded along with all other final testing results.

Shipment shall be made by the Supplier, in accordance with the P.O. requirements, after receiving formal authorization from Leonardo-SDI. If the Supplier ships directly to Leonardo-SDI's customer, he will do so only against the Certificate of Conformity issued by Leonardo-SDI and all contractual information pertaining to the shipment.

The Supplier shall be responsible for ensuring that carriers apply all provisions for ammunition in accordance with the legal regulations, the requirements specified at para. 4.1, or those contained in Leonardo-SDI technical documentation.

6 AMMUNITION AND EXPLODING DEVICES - IMPORTANT PRODUCTS (RQF = E2)

This paragraph applies to supplies of custom-made Ammunition and Exploding Devices (Important products) produced against Leonardo-SDI technical documentation.

Important Products are those not included in the list of Complex/Critical Products (RQF = E1) and such that:

- The product has important performance characteristics that can be correlated, even indirectly[4] , to mission operability or onerous replaceability in terms of time and cost;
- The manufacture is considered complex and may employ special processes but other critical activities are not required. However, it is necessary to specify the sequence of process steps with associated control points;
- The level of risk associated to product manufacture is limited but time planning of activities is considered necessary;
- The manufacturing and control process is mature and established.

For such products, in addition to the general requirements referred to in paragraph 4, the requirements specified in the following sub-paragraphs apply.

6.1 Quality System Organization

The supplier shall implement and maintain throughout the duration of the supply a Quality System in accordance with ISO 9001:2015.

The supplier's Quality System shall incorporate, as applicable, the additional requirements of UNI EN 9100:2018 and the specific requirements of AQAP-2110 (especially for configuration management aspects), AQAP-2310 (for aeronautical products), AQAP-2210 and UNI EN 9115 (in case of supplied software to be integrated into Leonardo-SDI-designed products such as the "smart ammunition" self-homing or in-flight piloting systems).

6.2 Manufacturing planning and control

The supplier shall plan and implement a suitable control system to provide evidence of the activities performed to produce the supplied products under controlled conditions.

Before starting works, the supplier shall send to Leonardo-SDI the Quality Plan (if requested in the PO), and prepare the time schedule of the activities (GANTT) to be made available for viewing upon request.

The production process shall be defined in a Manufacturing and Control Plan (MCP) that shows the sequential stages of product realization by identifying: external procured parts, incoming tests, internal and external manufacturing activities, points of controls to be performed with or without the presence of Leonardo-SDI, and that provides for the recording of controls applied.

The MCP shall be supplemented with Work Cycles and Instructions/Procedures for product manufacture, assembly and inspection/verification, including criteria for final acceptance.

The supplier shall submit the MCP to Leonardo-SDI for approval in cases where the Business Unit holds the Industrial Property of the product.

The supplier shall make available the list of authorized testers and their respective competencies, and perform the scheduled final tests according to the procedures provided by Leonardo-SDI or prepared by the supplier itself (according to the technical documentation indicated in the PO).

[4] e.g. for installation aspects

On request, the supplier shall provide evidence of the outcomes of the controls and tests carried out during manufacture.

All records of incoming and manufacturing (intermediate/final) tests and inspections shall be stored and retained by the supplier for at least 10 years from the end of delivery, unless otherwise specified in the purchase order.

6.3 Validation of production (FAI)

In the case of a production process implemented for the first time, if required by PO the supplier shall perform a verification of that process on the first item produced or the first production run (First Article Inspection).

The verification involves an inspection by Leonardo-SDI, as described in Appendix A.

The FAI shall be repeated if a suspension of the manufacturing process has occurred for 2 years or more since the last production run.

Records related to FAI shall be made in accordance with Appendix A of this document.

6.4 Special Processes

When manufacturing activities include application of *special processes*, the requirements of PQA008-L-IT-D apply.

6.5 Manufacturing/Acceptance Test

Supplier's Manufacturing Test

During the course of the supply Leonardo SDI shall be allowed, on request, to attend the supplier's intermediate/final manufacturing tests of contract items and/or their components, and in that case shall be entitled to select the sample to be submitted for testing.

Notification of Acceptance Test

The supplier shall invite Leonardo-SDI to attend acceptance test of the supplied product, at least 10 working days in advance of the scheduled date.

The notice shall be accompanied by the Certificate of Conformity (a filled out facsimile for Leonardo-SDI's approval) and all required documentation, in accordance with the directions of PQA004-L-IT-D and this PQA009-L-IT-D.

Acceptance Testing

Leonardo-SDI (and its customer as applicable) will attend final acceptance testing.

Acceptance tests will be conducted in accordance with documents issued by Leonardo-SDI (instructions, procedures or test sheets). Leonardo-SDI reserves the right to select the sample components/munitions submitted to tests.

As a part of the acceptance test, an audit shall be conducted to verify product compliance with the requirements of the supplier's (and any subcontractors') internal testing documentation.

Tests for final firing testing will always be manned by Leonardo-SDI personnel.

Records and Non Conformities

The results of the final manufacturing and acceptance tests shall be recorded and retained by the supplier in accordance with the indications in PQA004-L-IT-D.

Any non-conformities detected during the manufacturing or acceptance testing shall be recorded and managed by the supplier in accordance with PQA004-L-IT-D indications. Nonconforming products shall be re-submitted to Leonardo-SDI after a documented analysis has been carried out and adequate corrective actions applied.

6.6 Product identification

The products shall be identified in accordance with the technical documentation provided by Leonardo-SDI. Conformity of the product identification to the applicable requirements shall be verified by the Supplier's Quality and recorded along with all other final testing results.

6.7 Handling

In order to safeguard both the product and the personnel involved, all products shall be handled in compliance with the contractual requirements and applicable legal regulations, from entry into the plant and through all stages of manufacture/control, up to delivery.

6.8 Packaging and relevant identification (marking cases)

Packaging of products shall be carried out in accordance with the requirements given in the purchase order and attached technical documentation, the provisions at Para. 4.1 of this document, and the applicable legal regulations concerning cases and their identification.

The conformity of packaging and its identification to the applicable requirements shall be verified by the Supplier's Quality and recorded along with all other final test results.

The Supplier shall define on the Quality Plan (or other applicable document) and submit to Leonardo-SDI for approval, the criteria for package/case identification and marking.

6.9 Supply documentation and certification

Upon delivery, the supply shall be accompanied by Certificate of Conformity issued by the supplier in accordance with the directions of PQA004-L-IT-D.

Depending on their RQF Code indicated in the purchase order, the supplied products shall be manufactured and delivered with the related documentation in accordance with Table 2 at para. 10.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

All documentation related to the supply shall be stored and retained by the Supplier in accordance with Section 6.2 above.

6.10 Shipping to Leonardo-SDI site or its end customer

The supplied material shall be shipped after verification of packaging, package identification and accompanying documentation has been successfully completed. Compliance shall be verified by the Supplier's Quality and recorded along with all other final testing results.

Shipment shall be made by the Supplier, in accordance with P.O. requirements, after receiving formal authorization from Leonardo-SDI. If the Supplier ships directly to Leonardo-SDI's customer, he will do so only against the Certificate of Conformity issued by Leonardo-SDI and all contractual information pertaining to the shipment.

The Supplier shall be responsible for ensuring that carriers apply all provisions for ammunition in accordance with the legal regulations, the requirements specified at para. 4.1 and those given in Leonardo-SDI technical documentation.

7 STANDARD CATALOGUE AMMUNITION (RQF = E3)

There are two types of standard catalogue ammunition:

a. Ammunition for Leonardo-SDI customers to complete their supplies;
b. Ammunition for Leonardo-SDI tests.

For such products, in addition to the general requirements referenced at para. 4, the specific requirements of the following sub-paragraphs apply.

7.1 Quality System Organization

The requirements defined in PQA004-L-IT-D ('General requirements for the supplier's quality system') apply.

7.2 Ammunition for Leonardo-SDI's customers

In this case, Leonardo-SDI ensures the quality of the supply through verification activities of the externally provided processes and products. The requirements specified for custom-made ammunition produced in accordance with Leonardo-SDI technical documentation are still valid but all activities are carried out under the primary responsibility of the Supplier with control/monitoring of the manufacturing process by Leonardo-SDI.

The Supplier, on request, shall provide evidence, under its own responsibility, of validation of supplied products.

7.2.1 Manufacturing control

The requirements of para. 5.2 apply.

7.2.2 Manufacturing/Acceptance Test

Supplier's Manufacturing Test

During the course of the supply Leonardo SDI shall be allowed, on request, to attend the supplier's intermediate/final manufacturing tests of contract items and their components, and in that case shall be entitled to select the sample to be submitted for testing.

Acceptance testing

Leonardo-SDI (and its customer as applicable) will attend the final firing trials of complete projectiles.

If not otherwise specified in the PO, the acceptance tests shall be carried out in accordance with supplier's procedures approved by Leonardo-SDI, and Leonardo-SDI reserves the right to select the sampling submitted for testing.

As a part of the acceptance test an audit shall be conducted to verify product compliance with the requirements of the supplier's (and any subcontractors') internal testing documentation.

Records and Non Conformities

The results of the final manufacturing and acceptance tests shall be recorded and retained by the supplier in accordance with the indications in PQA004-L-IT-D.

Any non-conformities detected during the manufacturing or acceptance testing shall be recorded and managed by the supplier in accordance with PQA004-L-IT-D indications. Nonconforming products shall be re-submitted to Leonardo-SDI after a documented analysis has been carried out and adequate corrective actions applied.

7.2.3 Notification of Acceptance Test

The supplier shall invite Leonardo-SDI to attend acceptance test of the supplied product, at least 10 working days in advance of the scheduled date.

The notice shall be accompanied by the Certificate of Conformity (a filled out facsimile for Leonardo-SDI's approval) and all required documentation, in accordance with the directions of PQA004-L-IT-D and this PQA009-L-IT-D.

7.2.4 Handling

In order to safeguard both the product and the personnel involved, all products shall be handled in compliance with the contractual requirements and applicable legal regulations, from entry into the plant and through all stages of manufacture/control, up to delivery.

7.2.5 Packaging and relevant identification (marking cases)

Packaging of products shall be carried out in accordance with the requirements of the applicable technical documentation, the provisions at para. 4.1 of this document, and the applicable legal regulations.

The conformity of packaging and its identification shall be verified by the Supplier's Quality, and recorded along with all other final test results.

7.2.6 Supply Documentation and Certification

Depending on the RQF Code indicated in the purchase order, products shall be manufactured and delivered with documentation in accordance with Table 2 at para. 10.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

7.2.7 Shipment to the End Customer

The supplied material shall be shipped after verification of packaging, package identification and accompanying documentation has been successfully completed. Compliance shall be verified by the Supplier's Quality, and recorded along with all other final test results.

Shipment shall be made by the Supplier, in accordance with the P.O. requirements, only after receiving formal authorization from Leonardo-SDI. If the Supplier ships directly to Leonardo-SDI's customer, he will do so only against the Certificate of Conformity issued by Leonardo-SDI and all contractual information pertaining to the shipment.

The Supplier shall be responsible for ensuring that carriers apply all provisions for ammunition in accordance with the legal regulations, the requirements specified at para. 4.1 of this document and those given in Leonardo-SDI technical documentation.

7.3 Ammunition for Leonardo-SDI Tests

In this case, the Supplier ensures, under his own responsibility, the conformity of the supply. Leonardo-SDI reserves the right to approve the final testing procedure and to attend the final tests.

The Supplier, on request, shall provide evidence, under his own responsibility, of validation of supplied products.

7.3.1 Acceptance Test

Acceptance testing

Leonardo-SDI will attend the final firing tests of complete projectiles.

Unless otherwise specified in the PO, testing will be performed against supplier procedures approved by Leonardo-SDI, including definition of the sampling plan.

Leonardo-SDI reserves the right to select the samples to be submitted for testing trials; furthermore, if required in the purchase order, an audit shall be conducted to verify the product compliance with the requirements of the supplier's (and any subcontractors') internal testing documentation.

Records and Non Conformities

The results of the final manufacturing and acceptance tests shall be recorded and retained by the supplier in accordance with the indications in PQA004-L-IT-D.

Any non-conformities detected during the manufacturing or acceptance testing shall be recorded and managed by the supplier in accordance with PQA004-L-IT-D indications. Nonconforming products shall be re-submitted to Leonardo-SDI after a documented analysis has been carried out and adequate corrective actions applied.

7.3.2 Notification of Acceptance Test

The supplier shall invite Leonardo-SDI, with a minimum of 10 working days' notice, to attend acceptance test of the supplied products.

The notice shall be accompanied by the Certificate of Conformity (a filled out facsimile for Leonardo-SDI's approval) and all required documentation, in accordance with the directions of PQA004-L-IT-D and this PQA009-L-IT-D.

7.3.3 Handling

In order to safeguard both the product and the personnel involved, all products shall be handled in compliance with the contractual requirements and applicable legal regulations, from entry into the plant and through all stages of manufacture/control, up to delivery.

7.3.4 Packaging and its identification (marking cases)

Packaging of products shall be carried out in accordance with the requirements of the applicable technical documentation, the provisions at para. 4.1 of this document, and the applicable legal regulations.

Conformity of packaging and its identification shall be verified by the Supplier's Quality, and recorded along with all other final test results.

7.3.5 Shipment to sites indicated by Leonardo-SDI

The supplied material shall be shipped after verification of packaging, package identification and accompanying documentation has been successfully completed. Compliance shall be verified by the Supplier's Quality, and recorded along with all other final test results.

Shipment shall be made by the Supplier, in accordance with the P.O. requirements, after receiving formal authorization from Leonardo-SDI.

The Supplier shall be responsible for ensuring that carriers apply all provisions for ammunition in accordance with the legal regulations, the requirements specified at para. 4.1 of this document and those given in his own technical documentation.

7.3.6 Supply Documentation and Certification

Depending on the RQF Code indicated in the purchase order, products shall be manufactured and delivered with documentation in accordance with Table 2 at para. 10.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

8 CATALOGUE WEAPONS OR PARTS OF WEAPONS (RQF = E4)

This paragraph applies to military weapons (various calibers) and weapon systems listed in manufacturer's catalogues and technical specifications, being installable on naval gun mounts and land vehicles turrets, or portable as a complement to the equipment of armored vehicles.

The Supplier shall ensure, on its own responsibility, the conformity of the supply.

For such products, in addition to the general requirements referred to in paragraph 4, the specific requirements defined in the following sub-paragraphs apply.

8.1 Quality System Organization

The requirements of PQA004-L-IT-D ('General requirements for the supplier's quality system') apply.

8.2 Product Validation

The Supplier, on request, shall provide evidence, under its own responsibility, of validation of supplied products.

8.3 Acceptance Test

Notification of Acceptance test

The supplier shall invite Leonardo-SDI to attend acceptance test of the supplied product, at least 10 working days in advance of the scheduled date.

The notice shall be accompanied by the Certificate of Conformity (a filled out facsimile for Leonardo-SDI's approval) and all required documentation, in accordance with the directions of PQA004-L-IT-D and this PQA009-L-IT-D.

Acceptance testing

Acceptance tests shall be carried out against supplier procedures approved by Leonardo-SDI.

Leonardo-SDI reserves the right to decide whether or not to witness the tests.

Records and nonconformities

The results of the acceptance tests shall be recorded and retained by the supplier in accordance with the indications in PQA004-L-IT-D.

Any non-conformities detected during the acceptance testing shall be recorded and managed by the supplier in accordance with PQA004-L-IT-D indications. Nonconforming products shall be re-submitted to Leonardo-SDI after a documented analysis has been carried out and adequate corrective actions applied.

8.4 Handling

In order to safeguard both the product and the personnel involved, all products shall be handled in compliance with the contractual requirements and applicable legal regulations, from entry into the plant and through all stages of manufacture/control, up to delivery.

8.5 Packaging and its Identification (Marking cases)

Packaging of products shall be carried out in accordance with the requirements of the applicable technical documentation, the provisions at para. 4.1 of this document, and the applicable legal regulations.

The conformity of packaging and its identification shall be verified by the Supplier's Quality, and recorded along with all other final test results.

8.6 Shipping to sites indicated by Leonardo-SDI

The supplied material shall be shipped after verification of packaging, package identification and accompanying documentation has been successfully completed. Compliance shall be verified by the Supplier's Quality, and recorded along with all other final test results.

Shipment shall be made by the Supplier, in compliance with the applicable national/international legal regulations and in accordance with the purchase order requirements, after receiving formal authorization from Leonardo-SDI.

The Supplier shall be responsible for ensuring that carriers apply all provisions for transport in accordance with the applicable national/international legal regulations, the requirements specified at para. 4.1 of this document or additional applicable ones, and those given in the supplier’s technical documentation.

8.7 Documentation for the Certification of the Supply

Depending on the RQF Code indicated in the purchase order, products shall be manufactured and delivered with documentation in accordance with Table 2 at para. 10.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

9 AMMUNITION AND EXPLODING DEVICES - SIMPLE PRODUCTS (RQF = E5)

This paragraph applies to supplies of custom-made Ammunition and Exploding Devices (simple products) produced against Leonardo-SDI technical documentation.

Simple Products are those not included in the lists of complex/critical products (RQF = E1) or Important Products (RQF = E2) and such that:

For such products, in addition to the general requirements referred to in paragraph 4, the requirements specified in the following paragraphs apply.

9.1 Quality System Organization

The supplier shall implement and maintain throughout the duration of the supply a Quality System in accordance with ISO 9001:2015.

9.2 Production and testing

The activities necessary to comply with the requirements of Leonardo-SDI purchase orders shall be planned in a manufacturing/control cycle that provides for the recording of the controls applied.

The supplier shall make available the list of authorised testers with their competencies, and perform the planned tests according to the procedures provided by Leonardo-SDI or prepared by the supplier itself (according to the technical documentation indicated in the order).

On request, the supplier shall provide evidence of the results of the controls and tests performed during manufacture.

Records of incoming controls and manufacturing intermediate/final tests shall be stored and retained by the supplier for at least 10 years after completion of supply, unless otherwise specified in the purchase order.

9.3 Documentation and certification of the supply

Depending on the RQF Code indicated in the purchase order, products shall be manufactured and delivered with documentation in accordance with Table 2 at para. 10.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

In the event that the required certification is not attached to the shipping list, the supply may not be accepted and will be returned with related charges to be paid by the Supplier.

9.4 Shipment

The supplied material shall be shipped after verification of packaging, package identification and accompanying documentation has been successfully completed. Compliance shall be verified by the Supplier's Quality and recorded along with all other final testing results.

The Supplier shall ensure that carriers apply all provisions for ammunition in accordance with the legal regulations, the requirements specified at para. 4.1, and those given in his own technical documentation.

10 DOCUMENTATION

10.1 Supply documentation

Depending on the RQF Code indicated in the purchase order, products shall be manufactured and delivered with documentation as per Table 2.

Additional requirements or requests for documentation may be expressed by Leonardo-SDI in the purchase order or in other documents referred to therein.

Table 2 – Documents required from suppliers

Documents	RQF Code					Leonardo-SDI Acceptance Required	Date of delivery to Leonardo-SDI
	E1	E2	E3	E4	E5		
Quality Plan (QP)	X	(3)	X	X	---	Yes	Within 1 month from PO acceptance
GANTT/Planning	X	(2)	X	X	(2)	Yes	Within 1 month from PO acceptance
Risk Management Plan (RMP)	X	(7)	X	X	---	Yes	Within 1 month from PO acceptance
Configuration Management Plan (CMP)	(7)	(7)	(7)	(7)	---	Yes	Within 1 month from PO acceptance
Manufacturing and Control Plan (MCP)	X	X	---	---	---	Yes	Within 1 month from PO acceptance
	---	---	(2)	(2)		---	---
Work Cycles	(2)	(2)	(2)	(2)	---	---	---
Standard Operating Procedure/Sheets and Manufacturing Control Sheets	(2)	(2)	(2)	(2)	---	---	---
First Article Inspection Report (FAI Documentation – see Appendix A)	(3)	(3)	---	(3)	---	see Appendix A	see Appendix A
	---	---	(3)	---	---	(10)	(10)
Special Process Control Procedures (PPS)[5]	(1)	(1)	(1)	(1)	---	Yes	Within 1 month from PO acceptance
Special Process Certificates (CPS)	(1)	(1)	(1)	(1)	---	---	Upon delivery, for supply acceptance
Production Final Test Reports/Sheets (Visual Inspection, Dimensional Controls, Functional Tests)	X	X	X	X	(3)	---	Upon delivery, for supply acceptance
Final Manufacturing Dossier (FMD)	(2)	(2)	(2)	(2)	(2)	---	---
Configuration Register (CR)	X	X	X	X	---	---	Upon delivery, for supply acceptance
User Manual (UM)	(5)	(5)	(5)	(5)	(5)	---	Upon delivery, for supply acceptance

[5] Only for viewing at the supplier if the supplier holds the Industrial Property of the product.

Documents	RQF Code					Leonardo-SDI Acceptance Required	Date of delivery to Leonardo-SDI
	E1	E2	E3	E4	E5		
Acceptance Test Procedure (ATP)	(9)	(9)	X	X	---	Yes	1 month before acceptance test
Acceptance Test Report (ATR)	X	X	X	X	---	Yes	Upon delivery, for supply acceptance
Certificate of Conformity (CoC)	X	X	X	X	X	---	(11)
Copy of the Certificates of Conformity of any lot batched components	(4)	(4)	(4)	(4)	(4)	---	Upon delivery, for supply acceptance
Technical specifications including interface specifications, installation drawings and applicable configuration	---	---	(4)	(4)	---	---	Within 1 month from PO acceptance
Technical Drawings/Specifications for packaging and marking	---	---	(4)	X	---	---	Upon delivery, for supply acceptance
Certificate of Design and Development validation	---	---	---	(4)	---	---	Within 1 month from PO acceptance
Documentation for Logistic Support including: Use and Maintenance Manual and Illustrated Parts list	---	---	(4)	(4)	(4)	---	Upon delivery, for supply acceptance
Copy of the required Test Record Forms	X	X	X	X	---	---	Upon delivery, for supply acceptance
Factory test record forms for lots and/or serial components (including those supplied by from subcontractors)	(8)	(8)	(2)	(2)	---	---	Upon delivery, for supply acceptance
Firing test record forms for lots and/or serial components (e.g. propellant, igniters, cartridge cases, explosive, discharged projectile, charged projectile)	(8)	---	(2)	---	---	---	Upon delivery, for supply acceptance
Fuse/SAU factory test record forms	(8)	---	(2)	---	---	---	Upon delivery, for supply acceptance
Fuse/SAU firing test record forms	(8)	---	(2)	---	---	---	Upon delivery, for supply acceptance
Complete Cartridge factory test record forms	(8)	---	(2)	---	---	---	Upon delivery, for supply acceptance
Complete Cartridge firing test record forms	(8)	---	(2)	---	---	---	Upon delivery, for supply acceptance
EC Declaration of Conformity	(6)	(6)	(6)	(6)	(6)	---	Upon delivery, for supply acceptance
REACH Declaration and Safety Data Sheets (SDS) (see para. 10.2)	(4)	(4)	(4)	(4)	(4)	---	Upon delivery, for supply acceptance
ROHS certificate (see para. 10.2)	(4)	(4)	(4)	(4)	(4)	---	Upon delivery, for supply acceptance
Technical Data Sheets (TDS) of materials (see para. 10.2)	(4)	(4)	(4)	(4)	(4)	---	Upon delivery, for supply acceptance
Other certificates in accordance with the specific characteristics and requirements of the supply	(4)	(4)	(4)	(4)	(4)	---	Upon delivery, for supply acceptance
Documentation as required by the Prescriptions for the Transport of Dangerous Goods[6] (see para. 4.1)	(4)	(4)	(4)	(4)	(4)	---	Upon acceptance of purchase order

(1) If Special Processes are present; (2) To be provided for viewing on request; (3) Only if required in the purchase order; (4) As applicable; (5) For all types of Equipment; (6) For any Equipment or other product subject to safety requirements under one or more EU directives relating to CE Marking; (7) May be included in the Quality Plan if not otherwise required in the purchase order; (8) To be provided on request, if applicable; (9) Documents produced by Leonardo-SDI (10) To be sent only for viewing along with notification of acceptance test; (11) In copy version along with notification of acceptance test - In original version at delivery.

[6] For articles or substances that may endanger health, safety, property or the environment, included in the list of dangerous goods or classified as such under the regulations referred to in Para 4.1.

10.2 Documents required by current legal regulations

Upon delivery, in addition to the technical documentation describing the product characteristics, any other documents and/or certifications required by the current legal regulations shall be delivered.

The following specific requirements apply:

A) Technical Data Sheets (TDS)

When the items supplied contain non-metallic materials and/or chemical substances, Technical Data Sheets listing the specific characteristics of these materials shall be provided.

The list of substances for which TDS shall be delivered include at least:

a. Painting products (paints, solvents, thinners, catalysts, fillers, etc.);
b. Products used/usable for cleaning (soaps, acids/alkalis, detergents, etc.);
c. Adhesives and sealants (adhesives, mastics, sealants, adhesion promoters, etc.);
d. Lubricants (oils, greases, cleaners);
e. Welding materials (electrodes, welding wire, soldering flux pastes, sealing pastes, insulating pastes, non-stick pastes, etc.)
f. Composite materials;
g. Various types of resins;
h. Insulating (thermal / acoustic / fire-resistant / self-extinguishing / etc.) materials contained in the product;
i. Special metal sheets;
j. Technical gases;
k. Grinding products (metallic or non-metallic grit for sand-blasting, lubricant/cooling liquids, penetrating liquids, fuel oil);
l. Products for purification systems (acids, alkalis, etc.)
m. Coolants
n. Fire-extinguishing products (foams, powders, etc.)

The forms shall be sent to Leonardo-SDI along with each supply.

B) REACh Declaration

Pursuant to the REACH regulations (EU standard 1907/2006) a REACh declaration ex Art. 33 shall be produced for each supply item, stating the presence or absence of SVHC (Substances of Very High Concern) in quantities exceeding 0.1% weight/weight. The supplier shall notify Leonardo-SDI using the specific form available on the supplier portal of Leonardo S.p.a.(link: https://www.leonardocompany.com/it/suppliers/supplier-portal).

The form shall be sent to Leonardo-SDI along with each supplied item and by e-mail to the following address: reach.declarations.electronics_ds@leonardocompany.com.

The number of the relevant purchase order shall be indicated in the e-mail subject.

C) Safety Data Sheets (SDS)

In compliance with REACh and CLP regulations, the Safety Data Sheet (SDS) in Italian language shall be provided for each chemical product, substance and/or mixture being supplied.

The sheets shall accompany each supplied item and also be sent via e-mail to: reach.msds.electronics_ds@leonardocompany.com. The purchase order number related to the supply shall be indicated in the e-mail subject.

The contents of the Safety Data Sheets shall comply with the applicable legal requirements.

D) RoHS Certificate

For supplies of Electrical and Electronic Equipment, in compliance with RoHS regulation 2011/65/EU, the supplier is required to prepare a certification as indicated in the specific form PRG651-T-IT-D (the fillable version is available on the Suppliers Portal of Leonardo S.p.a. https://www.leonardocompany.com/it/suppliers/supplier-portal).

The form shall accompany each supplied item and also be sent by e-mail to: reach.declarations.electronics_ds@leonardocompany.com.

The number of the relevant purchase order shall be indicated in the e-mail subject.

11 RIGHT OF ACCESS AND SUPPORT FOR THE CUSTOMER AND GQAR

The requirements of PQA004-L-IT-D (“Right of Access and Support for the Customer and GQAR”) apply.

In the case of purchase orders subject to Government Quality Assurance, the requirement includes the right of the GQAR to participate in acceptance testing of supplied products.

Appendix A - FIRST ARTICLE INSPECTION (FAI)

A.1. INTRODUCTION

A.1.1. Purpose

The purpose of the First Article Inspection (FAI) is:

1. Validate the Supplier's production processes, by verifying on a representative sample of the first production run that the manufacturing processes used are capable of producing products that comply with applicable requirements and technical documentation..
2. Verify that the production processes are applied systematically and therefore they are stable and repeatable.

The purpose of this appendix is to define:

- ✓ The requirements to be met by the supplier for First Article Inspection on products supplied to Leonardo-SDI,
- ✓ Documentation required to provide evidence of the controls carried out on the product and the production cycle, and the equipment used.

A.1.2. Applicability

This appendix applies to provisions of Ammunition, Exploding devices and Weapons for which execution of the FAI is expressly indicated on the purchase order.

A.2 GLOSSARY

Definition	Description
Attribute	The result of the control of a characteristic or property that is evaluated only as to whether it conforms or not to the requirement but is not numerically quantified (e.g. pass-not pass or conforms-does not conform).
Balloon drawing	A drawing in which each characteristic or requirement is clearly marked with a unique identification number. The number can be within a circle or box for easy visual identification
Key Characteristic	Attribute or characteristic whose variation has a significant effect on product fit, form, function, performance, service life, or producibility, and which requires specific actions to keep its variation under control.
Design Characteristic	"Design Characteristics" are all of the dimensional, visual, functional (mechanical, electrical, embedded software, etc.) and property or performance characteristics of the materials constituting the object, as specified in the design documentation. "Design Characteristics" include process variables (e.g. heat treatment temperature and time), acceptability criteria (e.g. inspection class with penetrating liquids, acceptability standards), control procedures and welding sequences.
Drawing Requirements	These are the requirements indicated in the drawing, the bill of materials (if not mentioned in the drawing), the specifications or the purchase documents according to which the article is produced. They also include all notes, specifications and lower-level drawings.
Evaluation	Measurement, inspection or test to determine conformity of a characteristic with the requirements of the design.
FAI	A complete, independent and documented physical and functional verification process to confirm that the production methods adopted have produced an acceptable item as specified in the drawings, purchase order, technical specifications and/or other applicable documents.
FAI Plan	See "FAI Planning"
FAIR (FAI Report)	The FAIR is a set of documents and records, issued or prepared for each individual part and/or assembly constituting the object of the FAI and organized according to a specific standard established in standard UNI EN/ AS AS 9102.
Form, Fit and Function (3F or FFF)	Form, Fit and Function (FFF or 3F) represent the identifying characteristics of a component. If the fit, form and function requirements of two parts are identical then the parts are interchangeable.
Inaccessible Characteristic	A characteristic that can only be assessed when it is generated without sacrificing the part. For example, inaccessible dimensions such as internal dimensions of castings or welded joints Or inaccessible non-dimensional characteristics such as chemical and physical properties
FAI Planning	All of the activities that shall be carried out before production begins and that are included in a document called an FAI Plan
First Production Run	The first group of one or more parts which are the result of a defined production process which is to be used for the future production of the same part. Prototype parts or parts made using methods other than those envisaged by the production process shall not be considered as part of the First Production Run.

A.3 REQUIREMENTS

The supplier shall perform the FAI in accordance with guidance in UNI EN 9102 and this document. Upon completion of FAI activities, the supplier shall submit the FAI Report and relevant attachments to Leonardo-SDI for approval along with notification for the FAI acceptance test.

The forms to be used are those given in UNI EN 9102 (see Sections A.4.6 and A.5)

The requirements for the conduct and documentation of the FAI by the supplier are specified below.

In case of conflict between UNI EN 9102 and this document, the requirements of this document shall prevail.

Requirement 1

The outcome of the FAI is binding for the continuation of serial production and shall be performed on an article representative of the first production run. The Supplier shall not proceed with delivery before the FAI has been approved by Leonardo-SDI.

The FAI requirements shall be extended to all sub-tiers.

Requirement 2

The Supplier shall submit the FAI Plan to Leonardo-SDI within one month of receiving the purchase order. The document shall contain the activities carried out by the sub-tiers.

The FAIs carried out by sub-tiers are an integral part of the FAI of the material covered by the PO. Relevant evidence shall be delivered to Leonardo-SDI along with the supplied material.

Requirement 3

FAIs carried out on individual components (FAI Form 1 / field 13= Detail) of the supplied product, are an integral part of the FAI of the supplied product (FAI Form 1 / field 13= Assembly).

Requirement 4

The Supplier shall notify Leonardo-SDI of the start of planned activities at least 15 working days prior to the start of the activities.

Leonardo-SDI reserves the right to participate in any phase indicated in the FAI Plan.

In addition, the supplier shall notify by written communication Leonardo-SDI of his intention to apply changes to the FAI Plan at least 10 working days before their actual application.

Requirement 5

The Supplier shall carry out the FAI on the first production run: any exceptions are to be authorized in writing by Leonardo-SDI.

Requirement 6

The Supplier shall repeat the FAI (full or partial) when:

1 Design changes are made that affect interchangeability (3F);
2 Changes are made on the production process, control methods, production site, source materials, or equipment that can potentially affect interchangeability (3F);
3 Changes are made on numerical control programs or other programming languages that can potentially affect interchangeability (3F);
4 Natural or man-made events occur that can potentially affect the production process;
5 Two or more years (or as otherwise specified by Leonardo-SDI) elapsed from the last production.

Requirement 7

The FAI requirement can be met by a partial FAI (FAI Form 1 /field 14= Partial FAI), rather than a full FAI (FAI - Form 1 / field 14= Full FAI). In such case the partial FAI shall address only differences between the current configuration and a prior approved configuration.

The FAI requirement can be met by a previously approved FAI carried out on identical characteristics of a similar product produced at the same site by the same equipment, production cycle and materials.

Requirement 8

FAI does not apply to:

1 COTS materials;
2 Deliverable software;
3 Commercial metallic and non-metallic raw materials;
4 Prototypes;
5 Repaired materials.

Requirement 9

The FAI is not complete (FAI Form 1 / field 19= Not Complete) until all nonconformities affecting the product have been closed and the corrective actions necessary to eliminate the causes have been implemented. In such case a partial FAI (FAI Form 1 / field 14= Partial FAI) shall be repeated only on nonconforming characteristics.

Requirement 10

FAI results shall be documented by the supplier (see details at para. A.4.4/5/6)

Requirement 11

The Supplier shall properly retain the FAI documentation for at least 15 years unless otherwise specified in the PO, and shall provide Leonardo-SDI with a copy of the FAI, if requested, at no additional cost unless stated in the PO.

Requirement 12

If the FAIR is incomplete, partially incorrect or failed, Leonardo-SDI reserves the right to have the Supplier partially or completely repeat the FAI at no additional cost.

Requirement 13

The item submitted to FAI shall be identified by marking as specified in the drawing. If the drawing does not provide for identification, a label shall be used to be associated with the item or the identification shall be marked on the packaging.

A.4. KEY FEATURES OF THE FAI

A.4.1 Action plan for conducting the FAI

The Supplier shall carry out the FAI under its own responsibility, on one or more articles (as agreed with Leonardo-SDI) representative of the first production batch.

The FAI action plan is the set of activities to be performed before starting the production process of a supply subject to FAI. The plan shall provide to:

1. Verify that the applicable configuration referenced in the PO matches the product received;
   Identify all characteristics to be verified, as indicated in the applicable technical documentation. These characteristics shall be traced during the FAI process, identified in drawings (e.g. Balloon Drawing), specifications and other applicable technical documents, and recorded in FAIR Form 3.
2. Identify the key characteristics to ensure that they are properly verified during the production process;
3. Define the methods for validation of 3D measurement programs, including evidences necessary to support the validation results;
4. Review manufacturing plans, work instructions and applicable technical documentation, for verification of clarity, level of detail, and definition of control sampling methods;
5. Verify that the qualifications of personnel assigned to the production activities are appropriate for the planned operations and the planned special/critical processes;
6. Verify that sub-tiers are capable to provide all evidences related to the FAI;
7. Verify that sub-tiers of special processes, critical processes and NDT are included in QUA017-T-IT-D. Identify the equipment to be used to support the production process and verify that calibrations are still valid during the period of use, in accordance with the procedures of the supplier's Quality Management System;
8. Verify the presence of the functional test procedure and submit to Leonardo-SDI for approval;
9. Verify the presence of the packaging and shipping procedures, according to the supplier's Quality Management System and submit to Leonardo-SDI for approval;
10. Check for past recorded nonconformities (if any), and take appropriate corrections to the manufacturing process.

A.4.2. FAI Plan

The supplier shall submit the FAI Plan to Leonardo-SDI within one month of receiving the PO. The schedule may a table or GANTT diagram that states:

1. The date of availability at the suppliers of the procured materials needed to carry out the activities, appropriately identifying all components of the supply;
2. The planned dates of the activities reported in the Manufacturing Control Plan (MCP), including those related to special processes and control inspections (with identification of Holding and Witness Points). The FAI Plan and the MCP shall contain all the necessary controls to verify the characteristics identified on the drawings by the "ballooning" method;
3. The delivery date of the MCP, ATP and FAIR;
4. The dates of the final tests.

Periodically, on a monthly basis (to be agreed upon), joint reviews shall be conducted by Leonardo-SDI and the supplier to verify the actual completion of planned activities. In case of significant deviations between planning and progress, the frequency of meetings shall be increased.

A.4.3. Preliminary activities to FAI

Leonardo-SDI's approval of the following documents is required prior to the execution of FAI activities:

1. FAI Plan;
2. Test procedure (ATP);
3. Manufacturing control documents (e.g. MCP).

A.4.4. Conducting the FAI

1 The FAI shall be performed on one or more articles (as agreed with Leonardo-SDI) representative of the first production batch, called the First Production Run;
2 The FAI shall be performed on all components that make up the assembly;
3 The FAI shall be performed and documented in accordance with UNI EN 9102 and the instructions in this document;
4 Results from FAI shall be recorded in a FAI Report (FAIR), prepared according to the forms provided in UNI EN 9102 and in accordance with the indications of this document;;
5 Evidence of all verifications referred to in FAIR shall be an integral part of the FAIR itself;
6 The FAI shall be performed after the Product Readiness Review (PRR) where requested in the purchase order.

A.4.5 Status of the FAI

The status of the FAI (Complete / Not Complete) shall be recorded in the appropriate field of FAI Form-1.

The status is "Not Complete" when there are still open nonconformities related to the inspected part and any corrective actions have yet to be introduced. In such a case the supplier shall repeat the FAI of the non-conforming characteristics only.

A.4.6. Compiling FAI Forms

In order to document the results of the FAI, the Supplier shall use the Forms 1/2/3 provided in UNI EN 9102 (standard available on the SAE website), or may use his own company formats as long as containing the same fields of said standard. Fields indicated as optional (O) can be excluded.

All form fields shall be filled-in as required, in Italian or English language or otherwise specified in the order;

FAI documentation shall include records to provide evidence that the product fully meets its requirements.

All fields in UNI EN 9102 Forms are "colour coded" and "text-font-coded" as follows:

Required (R)	"Yellow" background and **bold** font
Required, under certain conditions (CR)	"Blue" background and ***bold italic*** font
Optional (O)	"White" background 2 regular font

Form 1 - Part Number Accountability

Used to identify the item subject to FAI and the related sub-assemblies,

Form 2 - Product Accountability (Raw Material, Specifications and Special Process(s), Functional Testing)

Used to identify materials and/or special processes and/or functional tests that have been defined as "design requirements".

Form 3 - Characteristic Accountability, Verification and Compatibility (Evaluation)

Shall be used to record the results of the inspections carried out

A.5. FAI FORMS OF UNI EN 9102

Facsimile of FAI Forms provided by UNI EN 9102 are presented below.

Form 1 EN9102 - P/N Accountability

1. Numero della parte Part number	2. Nome della parte Part Name	3. *Numero di serie* *Part Serial Number*	4. Numero Rapporto FAI *FAI Report Number*
5. *Revisione della parte* *Part Revision Level*	6. *Numero del disegno* *Drawing Number*	7. *Revisione disegno* *Drawing revision level*	8. *Modifiche aggiuntive* *Additional Changes*
9. Rif. processo di produzione Manufacturing Process Reference	10. Nome fornitore Organization Name	11. Codice del fornitore Supplier Code	12. N°. Ordine P.O. Number
13. FAI di un particolare Detail FAI ☐ FAI di assieme Assembly FAI ☐	14. FAI Completo Full FAI ☐ FAI parziale Partial FAI ☐	Numero della distinta della parte (incluso la revisione)	Baseline Part Number including revision level
		Motivo del FAI parziale: Reason for Partial FAI:	

a) Se la parte sopracitata è un particolare procedere al punto 19
a) If above part number is a detail part only, go to Field 19
b) Se la parte sopracitata è un assieme procedere alla sezione "INDICE" seguente
b) if above part number is an assembly, go to the "INDEX" section below.

ELENCO dei componenti o sottoassiemi richiesti per formare l'assieme sopracitato
INDEX of part numbers or sub-assembly numbers required to make the assembly noted above

15. *Numero della parte* *Part Number*	16. *Nome della parte* *Part Name*	17. *Serial Number parte* *Part Serial Number*	18. Numero del FAI *FAI Report Number*

1) La firma indica che tutte le caratteristiche descritte soddisfano le richieste del disegno o sono adeguatamente documentate per la disposizione.
Signature indicates that all characteristics are accounted for meet drawing requirements or are properly documented for disposition.
2) Indicare se il FAI è completo (vedi par. 5.4): ☐ FAI completo ☐ FAI non completo
Also indicate if the FAI is complete per Section 5. 4 : ☐ FAI complete ☐ FAI not complete

19. Firma Signature	20. Data Date
21. Controllato da *Reviewed by*	22. Data *Date*
23. Approvazione del cliente *Customer Approval*	24. Data *Date*

Form 2 EN9102 - Product Accountability

Responsabilità del prodotto – Materiale grezzo, Specifiche e Processi speciali, Collaudo funzionale
Raw Material, Special Process, Functional Testing (Materiali grezzi, processi speciali, test funzionali)

1. *Numero della parte* *Part number*	2. Nome della parte Part Name	3. *Numero di serie* *Part Serial Number*	4. Numero Rapporto FAI FAI Report Number

5. *Materiale o processo* *Material or process Name*	6. *Numero della specifica* *Specification Nr.*	7. Codice Code	8. *Codice del processo del fornitore* *Special Process Supplier Code*	9. *Approvazione del cliente* *Customer Approval Verification* (Yes/No/NA)	10. *Numero del certificato* *Certificate of Conformance nr.*

11. *Numero prova funzionale* *Functional Test Procedure Number*	12. *Numero del rapporto di accettazione (se applicabile).* *Acceptance report number, if applicable.*

13. Note.
Comments.

14. Preparato da Prepared by	15. Data Date

Form 3 EN9102 - Characteristic Accountability

Verification and Compatibility Evaluation

1. Numero della parte Part number				2. Nome della parte Part Name			3. *N°. di serie* *Part S/n*	4. Numero Rapporto FAI FAI Report Number
Caratteristiche da controllare *Characteristic Accountability*				Controllo / Valore ottenuto *Inspection / Test result*			Campo facoltativo *Optional Field*	
5. N° *Char N°*	6. *Riferimento* *Reference Location*	7. *Criticità attribuita* *Charateristic Designator*	8. Caratteristica richiesta Requirement	9. Valore ottenuto Result	10. *Strumento usato* *Designed Tooling*	11. *Numero della non conformità* *Non Conformance Number*	14. Inserire colonne, ecc, come richiesto dall'Organizzazione o dal Cliente Insert columns, etc, as required by Organization or Customer	
La firma indica che tutte le caratteristiche descritte soddisfano le richieste del disegno o sono adeguatamente documentate per la disposizione. The signature indicates that all characteristics are accounted for meet the drawing requirements or are properly documented for disposition.								
12. Compilato da Prepared by							13. Data Date	