THALES

SUPPLIER QUALITY ASSURANCE PROVISIONS

The Clauses hereon do not deviate from the applicability of the Terms and Conditions stipulated within this Purchase Order, and are supplemental thereto. If there should be any inconsistency, these Clauses shall take precedence. Applicable Clauses of this attachment shall be referenced on the face of the Purchase Order document. Clauses specified on the face of the Purchase Order should be thoroughly understood prior to the acceptance of the Purchase Order. Failure to meet the specified Clauses may result in rejection and return of material by Thales Defense & Security, Inc. (TDSI). If there is a conflict between a clause herein and a requirement contained within a TDSI drawing specified on the Purchase Order, the drawing requirement shall take precedence. Supplier shall flow down to the supply chain the applicable requirements.

A **Quality Management System (QMS) -** The supplier shall maintain a QMS that conforms to the current version of ISO 9001 as evidenced by current, accredited, third party QMS registration through members of the International Accreditation Forum (Reference IAF at: http://www.iaf.nu/) or an approved equivalent QMS approved by TDSI. Further, Seller's QMS shall flow down applicable quality and technical requirements, assure capability to produce items and assure adequate methods of assuring compliance. **Further, Seller's QMS shall assure** that its employees and subcontractors are aware of their contribution to product or service conformity, their contribution to product safety and the importance of ethical behavior. Seller shall require seller's suppliers to flow down and verify requirements for supplies/services they subcontract.

B **Inspection and Lot Tracking System –** The supplier shall perform sample inspection on the supplies provided. Said sample shall be taken on a stratified random basis from the defined lot. The defined lot shall be all parts produced since the previous defined lot and shall be limited to a single setup, production run or supplier delivery. A single defect or nonconformance from the sample shall cause the entire lot to be screened for that defect so as to assure the balance of the parts are free from such. Supplier shall assign a nonconformance tracking number to the rejection and record screening results and related root cause corrective action record if appropriate. ANSI/ASQ Z1.4-2003 shall be further used for the definition, presentation and inspection of lots. Unless otherwise accepted by TDSI, the minimum inspection sample plan shall be C=0 AQL 2.5 as defined in American Society for Quality H1331, ZERO ACCEPTANCE NUMBER SAMPLING PLANS.

The supplier shall maintain traceability to all raw material certificates/batches/heat numbers where specific raw materials are specified on Thales item specifications and delivered supplies must be traceable to the material certificate/batch number of the raw material used.

B1 **Lot Marking Per Part -** The supplier shall permanently mark the delivered item with the production lot number and or serial number traceable back to the manufacturing lot number.

B2 **Unit Serial Number Marking and Traceability -** The supplier shall permanently mark the delivered item with a unique serial number in sequential order and maintain traceability of the material, material certificates/heat/lot number, machine setup, molding run, casting run, machining run, plating batch, plating certificate, finishing certificate used to produce that serial number. No more than one lot of each type may be in the pedigree linked to a serial number.

C **Government Source Inspection -** Government Source Inspection is required prior to shipment from your plant. Upon receipt of this Order promptly notify and furnish a copy to the Government representative normally servicing your plant so that Government Source Inspection can be planned.

If a Government Representative does not service your plant, contact the nearest DCMC inspection office. If you cannot locate the DCMC office, the TDSI Buyer should be notified immediately.

D **TDSI Source Inspection –** TDSI Source Inspection is required prior to shipment from supplier to TDSI. Notify TDSI Buyer or TDSI Procurement Quality Engineer (PQE) ten (10) days in advance to permit scheduling of Source Inspection. There shall be no charge for source inspections. Source inspections do not relieve the supplier of responsibility for Final Inspection and/or Test, nor does it constitute final acceptance by TDSI. The Supplier shall provide all necessary inspection data, facilities, equipment and inspection/test personnel as necessary to enable product quality verification.

E **Special Processes –** Processes that require validation in accordance with ISO9001 and which are used in the delivery of goods or services for this order shall be validated and revalidated in accordance with ISO9001. Examples include but are not limited to plating, painting, welding, soldering, heat treatment, brazing, wire termination crimping and any other process where the results are not obvious in the post processed part or material.

F **TDSI / Customer Reservations -** TDSI reserves the right for TDSI, a representative of the Customer or a representative of regulatory agency to conduct surveillance of work operations on all items and/or constitute materials thereof at all levels of the supply chain that are being procured under this Purchase Order. There shall be no charge for these surveillance audits.

G **First Article Inspection & Place of Performance -** In advance of shipment, Supplier shall upload the FAI to the TDSI portal per instructions provided on OT16-008 FAI Cover Sheet.

Supplier shall not subcontract work requirements of this PO other than finishing (plating, paint, marking) without specific approval from THALES on a VIR. Supplier remains responsible for any work subcontracted.

The First Article Inspection Report (FAIR) shall be provided when any of the following occur:

1 – First Time Shipment to TDSI.
2 – Two years since shipment to TDSI.
3 – Part revision change affecting form, fit or function.
4 – Supplier change including manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling or materials, that can potentially affect form, fit, or function.
5 - A change in numerical control program or translation to another media that can potentially affect form, fit or function.
6. - A natural or man-made event, which may adversely affect the manufacturing process.

If a key characteristic is potentially affected by the event triggering a FAIR, a new capability study may be required. Consult directly with TDSI PQE for determination.

The first article report shall consist of detailed test and inspection results with all characteristics, specifications and drawing notes itemized. Parts from each tool cavity and alternate work center shall have representative parts inspected and/or tested. Material certifications, finish certificates, special process certificates, test data and any purchase order requirements shall be provided. Certificates of Compliance submitted with First Article data packages must list out each and every material and finish

requirement and attest conformance to such (reference QAP AJ). Reference AS9102 for preferred format and content. Any charged FAI shall be in AS9102 format and contain all AS9102 content.

Any additional production without receiving TDSI First Piece Inspection Report approval shall be at Supplier's risk. Where a supplier sub-contracts all or a portion of the manufacturing process, the FA must clearly identify the process, the subcontract supplier and the VIR authorizing such subcontracting.

H **Tooling Development and Approval –** Molds built to fabricate a TDSI part are subject to the following development and approval sequence: Kick-off Meeting, Tool Design Review, Tool Design Approval, Tool Fabrication, First Shot Review, QAP G First Article Inspection, Process Capability Study and QAP T PPQP Approval.

I **Test Data Submittal – All Shipments -** Complete quantitative results of all final electrical and/or mechanical measurements made by or for the Supplier must be included in duplicate with each shipment.

K **Test Procedure Approval -** Acceptance Test Procedures to be used in the execution of this Purchase Order must be submitted to TDSI for approval prior to the commencement of any acceptance testing. Approval shall be obtained from TDSI for all revisions made to test procedures after initial approval.

M **Certificate of Calibration -** A Certificate of Calibration traceable to NIST standards must be supplied for each item delivered on this order. Each certificate, as a minimum, shall identify each item by serial number, applicable standard(s) used, measured results, temperature and humidity, and any adjustments that were made. If the item is being recalibrated, the as received condition must be identified as passing or failing.

O **Shelf life and Safety Data Sheets (SDS) –** Materials identified by the OEM or on a TDSI DWG as having a limited shelf life shall have each outer shipping container marked with useful shelf life, expiration date, date of manufacture, and recommended storage conditions. Do not ship material with less than 70% useful shelf life. A Safety Data Sheet (SDS) shall be provided with each chemical shipment.

Q **Physical / Chemical Analysis -** Physical and / or Chemical analysis of raw material and applied finishes used in the manufacturing of parts and / or assemblies covered by this Purchase Order must accompany each shipment. A SDS is sufficient analysis for off the shelf chemicals.

R **O.E.M Lot Traceability -** Units supplied on this Purchase Order must have evidence of traceability to the Original Equipment Manufacturer (OEM) inspection and test records. All records substantiating traceability are to be retained and subject to review for a minimum period of ten (10) years.

S **Rubber Cure Data -** Certification must be supplied separate from Supplier's packing sheet but included with the material, specifying rubber cure date and durometer reading.

T **First Article Source Inspection and Product Process Quality Plan (PPQP) –**

1- Supplier shall request TDSI source inspection on all First Article shipments.
2- Product shall be manufactured and inspected in accordance with TDSI approved PPQP.

3- PPQP packages shall be organized and submitted electronically on a VIR requesting approval per OI16-006. If interested in using an alternate format such as a standard level 3 to 5 PPAP, contact the TDSI PQE.

T1 **Key Characteristic Cpk** - In addition to Key Characteristics (KC) identified on the part specification/DWG and supplier identified process critical characteristic, all DWG characteristics shall be measured on the first thirty units. KC and remaining attributes having a Cpk < 1.33 shall be documented in a measurement/control plan approved by TDSI.

Z **Request for Waiver, Deviation or PPQP approval** - Request for PPQP approval or information on any departures from Drawings, Specifications, Special Processes, including repairs and design changes, or other Purchase Order requirements must be reported on a Vendor Information Request (VIR) form. Formal disposition of the VIR must be obtained prior to shipment. A copy of the VIR must accompany each shipment or be referenced on supplied certificates of conformance.

AA **Calibration -** The Supplier shall maintain a calibration system in accordance with ANS/ISO/IEC 17025:2005 and ANSI/NCSL Z540.3.

AB **Electrical Component Packaging and Solderability -** Components supplied on Tape and Reel shall be packaged in accordance with EIA-481 and must be unidirectional in orientation for automated placement. Components intended for solder applications must meet coating durability requirements specified in ANSI/J-STD-002 category 3.

AC **ESD Protection -** The Supplier shall maintain, package, and ship material in accordance with the most current revision of ANSI/ESD S-20.20.

AD **Moisture Sensitive Devices (MSD) -** Integrated Circuits and other MSD devices provided on this Purchase Order must be supplied in the original, undisturbed O.E.M. packaging. Moisture sensitive device packaging shall be in accordance with IPC/JEDEC J-STD-033.

AE **Rigid Printed Circuit Boards (PCBs) –** PCBs shall comply with the fabrication, testing, and workmanship requirements of IPC-6012, Class 2 (Class 3 when specified on PCB DWG) and meet coating durability requirements specified in ANSI/J-STD-003 category 2. PCBs shall withstand processing as an IPC/JEDEC J-STD-033 MSD level 3 device and shall be labeled as "MSD level 3 (168hrs) Seal Date ___". Supplied and Supplier stored excess PCBs must be packaged and vacuum sealed in EIA583 type 1 moisture barrier bags (MBB) with humidity indicator cards and appropriate desiccant packs. Unless otherwise specified, no more than 10% of individual boards per pallet may contain X-outs. On pallets containing less than 10 boards, one (1) X-Out is permitted. A pallet is defined as the final array shipped to TDSI for component placement. X-out each nonconforming image and drill out its associated local and bad board Fiducials. Circuit continuity and insulation resistance testing is required on all product. Repairs are not allowed.

AF **Flexible and Rigid-Flex Printed Circuits -** Flexible and Rigid-Flex Printed Circuits delivered on this Purchase Order shall comply with the fabrication, testing, and workmanship requirements of IPC-6013, Class 2 (Class 3 when specified on PCB DWG) and meet coating durability requirements specified in ANSI/J-STD-003 category 2. PCBs shall withstand processing as an IPC/JEDEC J-STD-033 MSD level 3 device and shall be labeled as "MSD level 3 (168hrs) Seal Date ___". Supplier shall inspect flexible circuits in accordance with IPC 6013 class 2 sampling plans and inspect rigid flex in accordance with IPC 6013 class 3 sampling plans. Supplied and supplier stored excess product must be packaged

and vacuum sealed in EIA583 type 1 moisture barrier bags with humidity indicator cards and appropriate desiccant packs. If inner bubble bags are used, they must be ESD compliant. Unless otherwise specified, no more than 5% of supplied images per shipment and no more than 20% of individual flexible circuits per pallet may contain X-outs. On pallets containing less than 5 boards, one (1) X-Out is permitted. A pallet is defined as the final array shipped to TDSI for component placement. X-out each nonconforming image and drill out its associated local and bad board Fiducials. Circuit continuity and insulation resistance testing is required on all products. Traceability markings are required. If space does not permit on the image, the traceability markings are required on the array. Repairs are not allowed.

AG **Workmanship Class 2 -** Workmanship shall be in accordance with IPC-A-610 Class 2.

AJ **Certificate of Compliance (C-of-C), Record Retention and Counterfeit Part Avoidance-**

Certificate of Compliance (C-of-C) - A C-of-C shall accompany each shipment listing out Supplier's name, Thales item number, Thales Purchase order number, quantity delivered, authorized VIRs (QAP Z), and OEM lot number/date code/serial number recorded on the product or product container by the OEM. Where more than one OEM lot number/date code/serial number are provided per shipment, each shall be listed on the C-of-C. Mixed date codes within component reels and trays are not allowed.

Further, for items procured to Thales DWG or SCDs the C of C shall contain Thales Item revision, Thales drawing revision, and a statement signed by a quality assurance representative certifying the product has been inspected and/or tested to the requirements of the purchase order and purchase order specified drawings and specifications. Certificates for PCB and cast or machined products shall include reference to the raw material lot numbers and finishing requirements specified within the governing TDSI documents.

Record Retention - All quality records including but not limited to material inspection and test data for this order shall be retained for at least ten (10) years and be made available to TDSI, a representative of the Customer, or a representative of regulatory agency for inspection upon request. Longer record retention periods specified by active contracts takes precedent.

Counterfeit Part Avoidance - All material supplied and components used for the delivery of this PO shall be acquired directly from the OCM, OCM Authorized (Franchised) Distributor or OCM Authorized aftermarket manufactures. Supplier shall provide documented supply chain traceability upon request. The buyer is under no obligation to return suspect or confirmed counterfeit product.

AK **Cable Assembly Testing -** 100% of all multiconductor assemblies including all shielded assemblies shall be tested for continuity, shorts, Dielectric Withstanding Voltage (DWV) and Insulation resistance (IR) per IPC/WHMA-A-620 Class 2 (Class 3 when specified on DWG) except that continuity shall be class 3 (2 ohms or 1 ohm plus the resistance of wire whichever is greater).

AL **Cable and Wiring Harness Requirements and Acceptance -** Cable and Wiring Harness requirements and acceptance shall be in accordance with IPC/WHMA-A-620 Class 2 (Class 3 when specified DWG) except testing shall be in accordance with QAP AK.

AM **General Workmanship -** General workmanship shall be in accordance with MIL-HDBK-454, Requirement 9.

AR **Solder Workmanship Class 3 -** Solder workmanship shall be in accordance with IPC-A-610 Class 3.

AS **Soldering Program Requirements -** All items manufactured and delivered under this purchase order must meet the requirements for Soldered Electrical and Electronic Assemblies as defined in IPC/EIA J-STD-001 class 2.

AT **Software Configuration Management –** Supplier shall maintain a documented Software configuration management system to maintain version control and traceability of changes. TDSI acceptance of object code shall be subject to build verification and/or witnessed by TDSI. The supplier's configuration management capabilities necessary to rebuild an object from source shall be documented by the supplier. Source code shall be configuration managed in such a way that the supplier shall be able to revert to an earlier source code baseline. Each delivery of code shall be accompanied by software version document (OT16-007A) identifying known deficiencies and delivered functionality. The delivered code shall conform to industry standard best practices for coding standards. The Supplier shall have performed all software design, coding, test, debug, and integration on the target platform or one approved by TDSI. Any changes or modifications after acceptance of a configuration baseline shall be subject to review and approval by TDSI. Acceptance and approval shall be documented on a TDSI VIR or SW Acceptance Checklist (OT16-007B) showing compliance to contractual requirements.

AU **RoHS Compliance and Declaration of Conformity – S**upplier shall ensure delivered product is in compliance to RoHS Directive 2011/65/EU and further upon first shipment to TDSI or gap in shipment of more than one year, shall provide signed Declaration of Conformity on supplier's letterhead to RoHS Directive 2011/65/EU attesting that items do not contain, in excess of allowable limits, lead (Pb), mercury (Hg), hexavalent chromium (Cr(VI)), cadmium (Cd), polybrominated biphenyls (PBB), polybrominated diphenyl ether (PBDE) nor Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) which were added to Annex II by Directive (EU) 2015/863.

AV **ITAR Control Laws -** The Seller shall control the disclosure of, and access to, all technical data, information, hardware, and other items received under this Purchase Order in accordance with U.S. export control laws and regulations including, but not limited to, the International Traffic in Arms Regulations (ITAR, 22 CFR 120-130) and the Export Administration Regulations (EAR, 15 CFR Parts 730-774). The Seller shall indemnify the Buyer for all liabilities, penalties, losses, damages, costs and/or expenses that may be imposed on, or incurred by, the Buyer in connection with any violations of these export control laws and regulations by the Seller.

AW **Microelectronic Workmanship** - Substrate and hybrid microelectronic workmanship shall meet Mil-STD-883 method 2017 class H except where noted on the DWG. Hybrid microcircuits, multi-chip modules (MCM) and similar devices, shall meet class H performance requirements defined in MIL-PRF-38354.

AX **Immersion Silver Plating** - Printed Circuit Board shall meet the requirements and quality assurance provisions of IPC-4553A, Specification for Immersion Silver Plating for Printed Boards. PCBs shall comply with the fabrication, testing, and workmanship requirements of IPC-6012, Class 2. PCBs shall withstand processing as an IPC/JEDEC J-STD-033 MSD level 3 device and shall be labeled as "Package and Handle Per IPC-4553A, Immersion Silver Plating requirements - MSD level 3 (168hrs) Seal Date ___". Supplied and Supplier stored excess PCBs must be packaged and vacuum sealed in EIA583 type 1 moisture barrier bags (MBB). Unless otherwise specified, no more than 10% of individual boards per pallet may contain X-outs. On pallets containing less than 10 boards, one (1) X-

Out is permitted. A pallet is defined as the final array shipped to TDSI for component placement. X-out each nonconforming image and drill out its associated local and bad board Fiducials. Circuit continuity and insulation resistance testing is required on all product. Repairs are not allowed.

AY **FOD Prevention Program. -** The Supplier shall take all necessary measures to ensure that the product as received by TDSI is not contaminated with Foreign Object Debris (FOD). The measures will include establishing documented levels of FOD acceptance for the product and documented controls for associated tooling, test equipment and packing. FOD prevention measures may be reviewed during Surveillance Audits (QAP F), PPQP phases (QAP T) and or during Source Inspection (QAP D and or T). The FOD contamination review will include the product and its associated tooling, test equipment and packing**.**

Revision History

Rev.	Author	Change Description
8	T. Maczis	Initial release using revision history table. Changes were made to enhance QAPs B, E, G, H, AE, AF and AJ.
9	T. Maczis	Added QAP AX and updated for name change to Thales Defense & Security (TDSI)
10	T. Maczis	Updated QAP AX
11	T. Maczis	Updated QAP AJ, AK, AL, AT
12	T. Maczis	Updated A, F, AG, AJ,
13	T. Maczis	Updated A, B, D, F, G, AJ and added B1 as well as T1
14	T. Maczis	Updated B1, B2, D, G, M, O, Q, R, AA, AJ, AK
15	T. Maczis	Added AY (FOD Prevention Program), removed place of performance from AJ as it applies to BTP and is in QAP G, added 2011/65/EU controls to AU and corrected typo in QAP O Shelf Life
16	T. Maczis	Updated (A) QMS for employee awareness, (F) for all levels of supply chain, (G) for electronic submittal, (AK, AJ) for record retention period and (AU) for RoHS periodic Declaration of Conformity
17	T. Maczis	Updated (G) FAI to be uploaded to TDSI Portal using OT16-008 Coversheet.