The Supplier Business Cycle with Autoliv

The Product Life Cycle with Autoliv

- Component and Process Development
- Serial Production and Delivery

Click here to enter the Product Life Cycle Process Description!

Autoliv Supplier Requirements
- Quality Requirements
- Project Management
- Manufacturing System
- Logistic
- Environment

Supplier Pre-Qualification Process

New Programme

Autoliv Supplier Development Programme

Status Review
- Performance and Profile Evaluation
  - Business Result
    - Green
    - Yellow
    - Red

Start
The Product Life Cycle with Autoliv

Component and Process Development
(APDS = Autoliv Product Development System)

Serial Production and Delivery
(APS = Autoliv Production System)

Positive Supplier Performance

12. EOP = End of Production and Spare Parts
11. Continuous Process and Cost Improvement
10. Performance Review / APQP-Closure
9. SOP = Start of Production and Serial Deliveries
13. Complaint Reporting and Resolution
14. Autoliv Escalation Model
15. Quality and Delivery Review
16. Product Re-Sourcing

Negative Supplier Performance

Zero Defect
100% On Time Parts
Best Price
More Business

Autoliv Phase 4

Phase 3
Serial/Tool Order and Drawing

8. PPAP
7. Production-Trial-Runs
6. Prototype Order and Delivery
5. Contract Review Process
4. Control Level Definition and Start of APQP-Process
3. Supplier Selection / Supplier Project Start
2. RFQ, Quotation and Feasibility Study
1. Project Support and Pre-Quotes on Request

New Programme

Phase 0
Phase 1
Phase 2
Phase 3
Phase 4
SOP
Purpose:
The Autoliv Supplier Manual (ASM) describes and explains „How to do business with Autoliv“.

The Autoliv Supplier Manual (ASM) is an Autoliv worldwide standard and describes and documents the Autoliv’s business cycle.

The ASM provides guidelines and tools to facilitate Autoliv’s collaboration with its external suppliers.

The ASM will support Autoliv’s strategy to be a global company with a highly qualified and global Supply Base.

Scope:
All external suppliers developing and/or supplying production material to all Autoliv companies.

The ASM was developed with the intent to cover customized parts and sub-assemblies. For standard catalogue parts the ASM may be partially applied. This has to be defined by the responsible Autoliv Company.

Responsibilities:
Autoliv requires suppliers to fully comply with the ASM requirements. This must be confirmed by returning the ASM-Supplier Acknowledgement Letter.

The supplier should assign as a minimum one ASM-Program Manager to ensure that the Autoliv requirements are understood, trained, implemented and maintained at the supplier.

In case of any questions the supplier should contact the responsible Autoliv Lead Buyer.

ASM-Concept Introduction:
The ASM lines out the Autoliv Business Cycle, which is built up in four main blocks:

1. Autoliv Supplier Requirements:
They define the general specifications in the following areas:
1.1 Quality Requirements
1.2 Project Management
1.3 Manufacturing System
1.4 Logistic
1.5 Environment
1.6 Supplier Pre-Qualification Process
2. Autoliv Supplier Development Programme:
The Programme supports the supply base to comply with the above Supplier Requirements.
A programme participation is required upon demand of the lead buyer and is then mandatory.

3. The Product Life Cycle with Autoliv:
Is a structured process which describes the collaboration between Autoliv and its suppliers. It covers the entire product life cycle from early development phase to the end of product life.

4. Autoliv Supplier Status Review (Autoliv activity):
It’s a comparison of actual to requested supplier profile and performance. The review criteria are a combination of Supplier Development assessment, AS51 rating and Commodity evaluation.

The ASM is based on the ISO/TS 16949, the AIAG-Manuals, the APDS (Autoliv Product Development System), the APS (Autoliv Production System) and the ASPP (Autoliv Sourcing and Purchasing Process).

Contact:
Responsible Autoliv Lead Buyer.

ASM-Changes and Updates:
The supplier ASM-Program Managers will be informed through APP (Autoliv Partner Portal) about any major ASM-changes or updates. Additionally all changes and updates are documented on the ASM-change list included in the Manual (ASM Updates).
Non-conformance to changes and updates for any reason must be reported, by the supplier, to the responsible Autoliv Lead Buyer.
ASM-Reference Documents, (f.i. referenced standards, templates etc.) are always valid in their latest version.
Supplier improvement proposals on the Manual should be submitted to the responsible Lead Buyer.

ASM-Supplements:

♦ General Purchasing Conditions

The General Purchase Conditions (GPCs) are introduced to replace old country and business specific terms and conditions and shall be valid on all new business. The GPCs shall be valid from June 1, 2007, and shall be approved in writing by an authorized representative of the Supplier. The GPCs shall not be applicable on the Autoliv operations in North and South America.

♦ Autoliv Standards of Business Conduct and Ethics. (Link to www.autoliv.com/who we are/...)

The Autoliv Standard of Business Conduct and Ethics summarizes the legal and ethical rules and principles for the various business of Autoliv. Although it cannot answer every question of conduct that may arise in our business, this document should alert the reader to situations that require extra concern or guidance.

The supplier shall read and comply with the Autoliv Standards of Business Conducts and Ethics.

♦ Additional -not alternative- local requirements or templates may exist and can be found in the APP-Library (Autoliv Partner Portal).
Autoliv Supplier Requirements
- Quality Requirements - General -

Purpose:

To explain the Autoliv specific quality requirements in addition to the requirements included in the ISO/TS 16949 and ISO 9001.

Input from Autoliv:

- Autoliv Supplier Manual (ASM)
- Autoliv Standards referred to in the ASM

Requirements:

1. Responsibility

The supplier has the full responsibility to set up and maintain an effective, operating quality system ensuring that the supplier and their sub suppliers processes are under control and capable of developing and manufacturing materials/components and providing services which consistently conform to all Autoliv requirements.

2. Quality system

Autoliv requires compliance and evidence according to ISO/TS 16949, the AIAG-Manuals PPAP and APQP and the ASM. Autoliv Suppliers must have third-party Certificates to ISO 9001:2000 or ISO/TS 16949:2002 or a documented plan approved by Autoliv for obtaining such certification within 18 months of Autoliv’s approval of plan.

3. Advanced Product Quality Planning (APQP)

The supplier shall follow the APQP process as defined in the AIAG APQP Manual. Autoliv specific APQP requirements are documented on the S-APQP template. Each identified activity shall be planned and included in the supplier APQP process. These activities shall be documented on the S-APQP template and on the supplier project plan. The results from each activity during the project shall be made available to Autoliv on request. The supplier must report progress and the current status of all projects through the application of Advanced Quality Planning techniques. (references:S-APQP template and the AIAG-Manual APQP)

4. Production Part Approval Process (PPAP)

The AIAG manual "Production Part Approval Process" (PPAP) defines the requirements for part submissions. To ensure compliance with our customer's requirements, the Autoliv expectations and specific requirements have been established as additional PPAP requirements (references ASM-Quality Requirements/"PPAP" and AIAG-Manual PPAP)
5. Supplier Request for Engineering Approval (SREA)

The SREA procedure applies to all suppliers. Autoliv engineering approval is required prior to implementing any change. Reference is made to the AIAG-Manual PPAP/ SREA process.

6. Special Characteristics Classification

The Special Characteristics Classification and resulting actions are defined and explained in the Autoliv Standard AS 52. Frequency of submission of results of control and verification of Special Characteristics will be directed by the using Autoliv facility.

7. Product, process and system audit

Autoliv has the right to carry out product, process and system audits at the supplier and their sub suppliers. Autoliv has the right to require that the supplier carries out and reports internal product process and system audit results.

8. Dock Audit

When required by Autoliv, the supplier shall complete a Dock Audit prior to shipping a manufacturing lot of product to Autoliv (reference ISO/TS 16949 Clause 7.4.3, and section “Lot Definition” below).

A Dock Audit is a product inspection that is performed on product after the manufacturing activity and final inspection is completed (prior to shipment). A Dock Audit Report (DAR) shall be on required format and on file at the supplier’s facility and available upon request by the Autoliv using facility. The Dock Audit and DAR requirements will be provided to the supplier by the using facility SQE. Raw Material Certifications are to be retained by the supplier (reference “Document Control and Records”) and available upon request by Autoliv.

9. Annual Layout Inspections

The supplier shall conduct a one piece, 100% layout inspection of every part number minimum once per year from each manufacturing process and tool. This layout shall include all dimensions / characteristics specified on drawings and specifications, if not otherwise specified. Annual layout inspection and dates shall be included in the supplier’s production control plan. Any characteristics which are enumerated on the production control plan and are measured more frequently than once per year will not require annual layout inspection. The data shall be available on request from the Autoliv using facility. In the event there is a non-conformance, all related data shall be submitted to the product approval authority of the using Autoliv facility. For multi-cavity tooling, all cavities must be represented.

If a complete new PPAP submission is required, the PPAP will substitute the Annual Layout Inspection.

The above annual layout inspection standard is becoming a global, mandatory requirement for all supplier products where purchase orders is placed after the 31st of December 2004. Before that date Autoliv encourages suppliers to conduct the annual layout on existing and new products.

10. Product Safety, Liability and Warranty
The supplier is responsible for that any and all materials, components, products and services supplied to Autoliv in all respects conform to Autoliv specifications, drawings, quality requirements and that such materials, components, products and services are free from defects in design (to the extent designed by supplier), material and workmanship, are of merchantable quality and comply with all applicable laws.

All non-conforming materials, components, products and services can cause product safety, liability and warranty issues that will be claimed against the supplier.

Therefore all supplier staff members, who are responsible for or working with instructions related to product quality and performance, must be educated and understand the principles of product safety, liability and warranty.

The supplier must introduce adequate systems, ensuring the following:

- Information and qualification of the affected personnel.
- Legal advise (internal and external).
- Compliance with and use of state-of-the-art technology.
- That the development, production and quality assurance processes and their supervision are according to the latest status of technology (it may not be sufficient only to comply with the standard).
- Limitation of fault consequences by documentation and traceability system.
- Immediate information to Autoliv of any discovered non-conformity.

11. Product Status and Traceability

The supplier systems must ensure that all critical and significant characteristics as indicated on Autoliv drawings and specifications are traceable and recorded from the lot/batch number of the delivered part to the raw material(s) lot(s)/batch(s) from the sub supplier. This is also applicable for all process parameters affecting such characteristics and raw material certificates or analyses.

All records shall be provided to Autoliv immediately, without delay upon request.

The identification of inspection and test status for products shall be maintained at each stage of production. The traceability level of Autoliv parts is specified according to Autoliv Standard AS 4.

12. Lot / batch definition

If nothing else is specified, the suppliers manufacturing lot/batch size shall not exceed one (1) day (24 hours) production, with a maximum of 20,000 parts. The definition of the lot/batch size shall be done in consideration of traceability requirements.

(Reference: AS 4 see appendix 2)

13. Document Control and Records

All documents and records demonstrating product quality conformance and traceability documents, must be stored in safe condition in order to prevent destruction and maintained for minimum 20 years after shipment of items affected by document or longer if required by legislation. In addition to that specified in ISO 9001 or ISO/TS 16949, the following records shall require retention:
Production conformity test reports
- Critical process parameters as defined in the supplier Control Plan
- Raw material certificate
- Test procedures and results
- Receiving inspection results
- PPAP submission and response
- Master samples

14. Corrective Action

The Autoliv expectations regarding problem solving are defined and explained in the Autoliv Standard AS 63 and in the ASM-Main block "The product Life Cycle with Autoliv"/"Complaint Reporting and Resolution"

15. Continuous Improvement

Autoliv requires a continuous improvement program from their suppliers. Autoliv recommends the tools included in the APS (Autoliv Production System). The program shall also include actions to identify and reduce process variations. References: ASM-Main block “The product Life Cycle with Autoliv/Continuous Process and Cost Improvement” and ASM-Main block/ “Autoliv Supplier Development Programme”

16. Reference documentation

Any document used as a reference document in the ASM, refers to the latest valid revision.

Output from Supplier:
- Acknowledgement of acceptance of ASM (Autoliv Supplier Manual).
- Third party Quality System certification or plan to reach ISO 9001 or ISO/TS16949 certification.

Required Documents:
- ASM Supplier Acknowledgement Letter
- Third party Quality System certificate or documented plan to reach ISO 9001 or ISO/TS16949 certification.

Reference Documents:
- S-APQP-template (General Excel Guideline)
- AS 4 (Product Traceability)
- AS 52 (Product Characteristics Classification)
- AS 63 (Problem Solving Process)
- AS 69 (Special Processes - Requirements and Assessments)
- AS 69 Heat Treat Assessment File
- AS 69 - Plating Assessment File
- AS 69 - Coating Assessment File
ISO / TS 16949 (Quality Management Systems)
ISO 9001 (Quality Management System)
AIAG manuals (obtainable e.g. from Carwin Continuous Ltd. Unit 1 Trade Link, Western Ave, West Thurrock, Grays, Essex, England (Tel. +44-1708861333, Fax +44-1708867941) and on internet address www.asq.org/9000):
  - PPAP (Production Part Approval Process)
  - ISO/TS 16949 System Audit Questionnaire
  - APQP (Advanced Product Quality Planning and Control Plan)
  - SPC (Statistical Process Control)
  - MSA (Measurement Systems Analysis)
  - P-FMEA (Process Failure Mode and Effects Analysis)

Latest revision
09/25/2008 10:22:53 AM
Replaced AS 69 (Heat Treat Requirements) with AS 69 Special Processes - Requirements and Assessments
Replaced AS69 Appendix A (Heat Treat Audit) with AS 69 Heat Treat Assessment File, AS 69 - Plating Assessment File and AS 69 - Coating Assessment File

Revision History

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Category: The supplier business cycle with Autoliv
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Autoliv Supplier Requirements
- Quality Requirements - PPAP -

Purpose:
To explain Autoliv specific instructions concerning the AIAG PPAP requirements

Input from Autoliv:

- PPAP request including PPAP-Submission-Index template
- Autoliv released drawings and specifications
- PPAP checklist, if required by Autoliv.

Requirements:

General:

- The default level for PPAP submissions is 3, unless specified otherwise by the responsible part approving body. The supplier is responsible for ensuring all PPAP elements are kept up to date to reflect the current approved part and process whenever required to be submitted.
- All documents shall be in English.
- Laboratory data in the original PPAP submission must be less than 12 months old.
- Traceability for PPAP parts shall meet the same requirements as serial parts
- Additional elements may be added to the PPAP process due to Autoliv's specific customer demands
- The PPAP approval is not a production nor a delivery signal. The supplier shall wait for further delivery information/schedules from the Autoliv receiving plants. Reference ASM-Quality Requirements/"PPAP"
- In the event that another Autoliv-plant plans to place orders for a part which already has an Autoliv-PPAP-approval, the PPAP-release process shall not be repeated. A supplier-PPAP-approval by one Autoliv-plant is also valid for all other Autoliv-plants. The (approved) PPAP documentation may be requested by Autoliv just to confirm the original approval.
- Re-submitted samples following rejection must be accompanied by all relevant documentation as required for the original PPAP samples.

PPAP basic requirements for each item:
1. Design Records of Saleable Product
The supplier shall include 2-dimensional controlled copies of the design records. The records include component drawings, product specifications and hardware / software specifications.

1.1 IMDS-Declaration of Material (done in IMDS database)
Documentation of an approved IMDS declaration. Material composition is declared within IMDS and sent to Autoliv through the IMDS system. Documentation of an approved IMDS declaration shall be included within the PPAP package. As a consequence, the supplier shall complete the IMDS entry in the IMDS database a reasonable time period before the agreed
PPAP-submission-date. This procedure will give Autoliv the opportunity to approve the IMDS-entry prior to the supplier's PPAP submission date. In case Autoliv does not respond to the IMDS declaration before supplier's PPAP submission date, it is sufficient for the supplier to submit only the IMDS entry confirmation with the PPAP package. PPAP approval can only be done with an approved IMDS Declaration. (IMDS Reporting Guideline)

Since the IMDS declaration is a full declaration of materials, the absence of forbidden substances will be confirmed by the IMDS declaration. (Ref: AS 5 and ASM-Supplier Requirements/Environment).

2. **Engineering Change Documents**
The supplier shall include any authorized engineering change documents not yet recorded in the design records but implemented in the product, part or tooling. (Supplier Request for Engineering Approval)

3. **Customer Engineering Approval**
If samples are evaluated by Autoliv e.g. form, fit or function, the approval and comments shall be documented. Samples shall be delivered to Autoliv for approval (Ref.: AIAG PPAP Manual - ESA form)

4. **DFMEA**
If the supplier is design responsible, the supplier shall include their reviewed and approved D-FMEA.
Ensure all CC/SC characteristics have been identified and included from the design records and that actions have been defined and implemented during design phase. (Ref.: AS 52)

5. **Process Flow Diagram**
Flow diagrams that clearly describe the production process, steps and sequence. All steps in the manufacturing process shall be identified and keyed to the PFMEA and Control Plan.
Traceability requirements confirmed by a traceability specific flow chart, (Ref See AS 4, AS 244)

6. **Process FMEA**
Reviewed and approved P-FMEA for actual process, all steps shall be keyed to Flow Chart and Control Plan. Ensure all CC and SC characteristics have been identified and included from the design records and D-FMEA, including manufacturing process Special Characteristics and that actions have been defined and implemented. (Ref. AS 52)

7. **Control Plan**
Production Control Plan, keyed to Process Flow Diagram and the P-FMEA. CC/SC and process special characteristics shall be identified and methods to control defined on the Control Plan. Any rework/repair operations shall be approved by Autoliv and included. Layout Inspection shall be included in control plan.

8. **Measurement Systems Analysis Studies**
Reports of MSA analysis performed on all test and measuring methods used for serial production as referenced in the Control Plan. Gauge R&R and measuring data shall be reported for all measuring methods used to accept product, and noted on control plan, including operators, material and environmental variations. Special attention shall be paid on methods used for verifying special characteristics CC/SC. Gauges funded or directed by Autoliv to be included. (Reference AIAG Manual MSA)

9. **Dimensional Results**
Reports of all dimensions and parameters documented in the design records for all cavities and each unique manufacturing process. The dimensional report must be keyed to the design record (ballooned).

The supplier shall respond to each drawing note and specification item and blanket statements are not allowed, test results and a “pass / fail” statement is required. Number of samples unless otherwise agreed is five. (5)

10. Material / Performance Test Results
When design records or Control Plans specify chemical, physical, metallurgical performances and / or functional requirements the supplier shall be responsible to ensure that the tests are performed for all parts and product materials:

a) Functional measurement; Report of the products functional characteristics, e.g. electrical measurements, sensitivity, force etc.

b) Material performance; Report of the products material characteristics, e.g. structural strength, retention force, composition etc.

c) Validation results; Report of the products performance/reliability qualification, e.g. vibration, moisture, ESD, temperature etc.

For semiconductor devices and electronic components, tests according to AEC Q-standards is required. e.g. Q-100.

d) Characterization; Reports of characterization according to AEC Q-003 is required for semiconductor devices.

All testing shall be less than one (1) year old at the time of PPAP and serial status on product and process. Blanket statements are not allowed, test results and a “pass / fail” statement is required e.g. CFG 1004/1005.

11. Initial Process Capability Studies
The supplier shall provide a preliminary process capability study (Ppk) on all CC’s and SC’s. Default requirement is Ppk studies required on all CC’s and SC’s as indicated on Autoliv drawings and related specifications. Reports of capability studies performed on defined process steps and product characteristics, > 100 parts from continuous production measured. For unstable processes corrective actions has to be implemented.

Processes to be controlled by statistical methods to be identified and reported in control plan. Special requirements applies for CC/SC. Test results and a “pass / fail” statement is required. See AS 52.

12. Qualified Laboratory Documentation
If the supplier uses an external laboratory, this has to be accredited to ISO/IEC 17025 (or equal regional accreditation) and include their ISO/IEC 17025 Certificate in the PPAP. If an internal lab is used the supplier shall provide evidence of ISO/IEC 17025, ISO/TS 16949 or ISO 9001 certification, as well as a lab scope which defines all the tests the lab is able to perform.

13. Appearance Approval Report
If the part has appearance requirements (i.e. structure and colour), the supplier PPAP must include an Autoliv approved AAR. The supplier shall compile all surface data in one report for each part number. The AAR shall represent serial production. In case of required AAR the supplier has to retain released and signed off samples from Autoliv. The specific quality characteristics shall be clearly indicated on the samples or on an attached label. The amount of samples has to be defined with Autoliv.

14. Sample Product Parts
The supplier shall submit sample parts as requested by the using facility.
In case of required AAR the supplier has to retain released and signed off samples from Autoliv. The sample specific quality characteristics shall be clearly indicated on the samples or on an attached label. The amount of samples has to be defined together with Autoliv.

15. Master Sample Parts
Unless specified otherwise, the supplier shall:

- Identify three (3) parts identical to measured parts (see item 7 above), as Master Sample Parts and label them with Master Sample tags.
- retain two (2) Master sample Parts and submit one (1) with the PPAP submission.

16. Checking Aids
If requested by Autoliv, the supplier shall include in the PPAP submittal, any part specific Checking Aids. Checking Aids can include: fixtures, gages, models, templates, and/or mylars used to accept product, as identified in the Control plan. The supplier shall certify that all aspects of the Checking Aid(s) agree with the part dimensional and functional requirements. The supplier shall provide for preventive maintenance for any checking aids for the life of the part.

17.1 Approved AS 5-Waiver Request
The submission requirements of this chapter are only applicable, if materials are designed or chosen by the supplier:
For any materials, components and products containing substances classified as forbidden (Ref. AS 5: List of Forbidden and Restricted Substances) the supplier must make sure that the Autoliv approved Waiver Request (Ref AS 5, Waiver Request Form for Forbidden Substances) is included in the PPAP package.
Note that the inclusion of the approved Waiver Request in the PPAP submission is to show the authorised use. The action to obtain this Autoliv authorisation (approved Waiver Request) must take place prior to PPAP. (Ref: AS 5 and ASM-Supplier Requirements/Environment).

17.2 Submission of AS 244 - label samples
The supplier shall submit a sample of serial representative labels properly filled out to verify its compliance to AS 244 and any local requirements defined by the receiving plant, if requested by Autoliv. (Ref.: AIAG, AS 244)

17.3 Manufacturing Lot Traceability
The Supplier shall include a generic flow chart describing the product traceability system per AS 4. This flow chart is to include their supplier traceability, receiving of material, production and shipping to Autoliv.

17.4 Special Processes Audits
If the Supplier is responsible for performing any "special process" per AS 69 such as heat treating, plating or coating, they are responsible to ensure a self audit or an Autoliv sponsored audit is performed each year. Results of the latest audit are to be submitted with the PPAP.

17.5 Packaging Instructions
Include copy of the packaging instructions if required.

17.6 Tool Asset Form
Check if a copy of the Tool Asset Form was sent to the proper party / location (if applicable)
18. Part Submission Warrant (PSW)
Completely filled out PSW, PPAP submission level is 3 unless otherwise directed by the Autoliv using facility. The supplier declares that all product and process requirements are fulfilled, unless otherwise stated. Sub supplier PSWs to be available for review upon request. The PPAP is approved when the supplier receives a copy of the approved PSW.

19. Bulk Material Requirements (BMR) Checklist:
The supplier shall include a BMR checklist if it is required for bulk material.

Signature Blocks:
The supplier representative responsible for PPAP shall sign the PPAP.

Output from Supplier:
PPAP (Ref.: Step 8 Autoliv Product Lifecycle/PPAP)

Required Documents:
As defined in Step 8 Autoliv Product Lifecycle (PPAP)

Reference Documents:
- AIAG manuals
- ASM (Step 8/PPAP)
- ASM Supplier Requirements/Logistics
- ASM Supplier Requirements/Environment
- AS 5 (Material Data Management and Substance Use Restrictions)
- AS 52
- AS 244
- Automotive Electronics Council (AEC) Manuals

Latest revision
2009-10-26 15:52:28 Chapter 17.1 and 17.2 changed places according to the PPAP checklist. Chapter 17.3, 17.4, 17.5, 17.6 clarified

Revision History

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Category: The supplier business cycle with Autoliv
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Autoliv Supplier Requirements  
- Project Management -

**Purpose:**

- To inform about the Autoliv requirements on the supplier’s:

1. Project Management System.
2. Personnel capabilities and resources in project supporting departments.
3. Engineering- and project supporting-equipment.

- Close and frictionless project collaboration between suppliers and Autoliv is a key success factor. Project collaboration is supported by two main columns:
  - Professional project management processes on both sides, structured collaboration processes and well defined interfaces.
  - Regular meetings and effective communication.

**Input from Autoliv:**

Project specific inputs are defined in the “Product Life Cycle with Autoliv”. If any project inputs are missing, the supplier shall pro-actively request missing information. If missing inputs compromise the project timeline, the supplier shall inform the responsible buyer immediately in writing.

**Requirements:**

1. **Project Management System**
   1.1 General Requirements

The supplier defines implements and maintains a PM-System with procedures for project teams and management, which describe how projects are run and controlled. These procedures must be incorporated into the suppliers quality management system. The PM-System must focus on risk and problem avoidance through early risk and problem detection and management.

- **Project Team:**

In accordance to TS 16949 supplier projects shall be driven by an interdisciplinary team and lead by a project leader. The suppliers management shall assign to the project team the full responsibility and competence for the defined project tasks and results. The project team shall ensure that all end-of-phase milestones, hereafter called “Tollgate”, requirements are met prior to a tollgate review.

- **Project workflow:**

Every supplier project must follow a defined, supplier specific workflow, which - in accordance with the TS 16949 requirements- shall be separated into different (project) phases.

**Example:**
Autoliv’s APDS (Autoliv Product Development System) Workflow consists of five phases and five TG.

The supplier shall ensure continuous project synchronization with Autoliv and sub-suppliers.

♦ Tollgates (TG):

A “Tollgate” shall end each defined project phase. A Tollgate is a significant event marking the progression of the supplier project. A TG requires a Tollgate review and approval to pass. The supplier TG reviews require participation of the executive management responsibles. It's recommended to include the Managing Director and the functional management responsibles. To structure the TG-Reviews the supplier shall synchronize the project plan with actual project results (based on project QCD (Quality/Cost/Delivery). TG-dates shall be fixed dates (milestones) controlled by the project plan.

♦ Language:

The project plan, the APQP (Advanced Product Quality Planning) report and submitted test- , PPAP (Production Part Approval Process)- and other documentation must be in English.

♦ Project and Design Changes

The supplier shall install procedures to control project and design changes according to TS 16949 requirements. For all changes, which impact the project timing, the project synchronization has to be repeated and the Project-Plan and S-APQP-plan has to be updated.

In case of any major risks or actual QCD-target (Quality/Cost/Delivery) conflicts Autoliv has to be informed immediately in writing and an action plan has to be submitted.

1.2 Requirements on Supplier Development Processes:

The Supplier Development Process shall contain the product/component development process (if applicable) as well as the manufacturing process development.

To successfully run a project, the supplier defines in the Supplier Development Process all project tasks and their relations.

♦ 1.2.1 Supplier Development Process

The Supplier Development Process shall be based on:
The supplier, sub-supplier, technology, tool and manufacturing process specific project tasks. Project tasks -their planning, realisation and review- in the following areas must be considered in the Suppliers Development Process:

- Programme and Resource Management
- Cost Controlling
- Product-, Process- and Tool-Development
- Manufacturing
- Logistic (incl. Packaging)
- Purchasing and Sub-Supplier-Management

The Advanced Product Quality Planning (APQP) project activities in the S-APQP-template. Reference is also the AIAG-Manual APQP.

The defined supplier PM-System and its project phases and TG-reviews.

The Autoliv project requirements described in the ASM main block “The Product Life Cycle with Autoliv”.

The project related TS 16949 requirements (in Chapter 6. and 7.).

The AIAG-Manual PPAP.

1.2.2 Supplier Standard-Project-Plan

The Supplier Development Process shall be defined through a supplier specific Standard-Project-Plan.

The supplier’s Standard-Project-Plan describes how the project tasks are related to each other. The Standard-Project-Plan shall be a general plan not taking any specific product into consideration. It shall show and reflect the task relations with the least amount of risk. It must focus on risk and problem avoidance through early problem detection and risk management. This must include the use of Risk-Analysis- and FMEA-methods.

The Standard-Project-Plan shall case by case be adapted to every new project, as defined by Autoliv and to be used for all Autoliv projects. The project-oriented, adapted Standard-Project-Plan is then called Project-Plan.

Illustration/Explanation: Supplier Development Process and APQP-Report usage in projects:
2. **Personnel capabilities and resources in project supporting departments**

- Personnel capabilities and resources in project supporting departments must be adequate to the assigned tasks.

- Project personnel resource planning shall also consider, that Autoliv expects project accompanying, regular meetings at Autoliv's Design- and Production facilities.

- Project personnel training must be traceable and should -beside functional knowledge and qualifications- cover:
  
  - PM-Methods and -tools
  - Project-Planning-Software training (e.g. MS-Project)
  - APQP methods and tools
  - VE/VA-methods (Value Engineering and Value Analysis)
  - P-FMEA
  - Statistical Methods
  - PPAP
  - CAD-trainings
  - ASM-trainings (including referenced Autoliv Standards)
  - D-FMEA, DOE or similar tools (if product design is a supplier responsibility)
  - Autoliv product trainings (request Autoliv support, if necessary)

3. **Engineering- and project supporting-equipment**

- The supplier must have available a CAD-Terminal and appropriate CAD-software to support product design and to exchange and edit drawings and 3D-Models with Autoliv. Specific CAD-software on Autoliv request. Note: The supplier should be prepared to receive drawings and
specifications through the APP (Autoliv Partner Portal).

- When electronic CAD data (3D-Models and drawings) are submitted to the supplier, it is the native format in which it was originally designed, this is considered as the master data. Any translations done on this data is the supplier’s responsibility. If re-submission of the data to Autoliv is required, the supplier is responsible for the integrity of the data.

- Appropriate project planning software (preferable MS-Project) is to be used for all Autoliv projects. The supplier’s Standard-Project-Plan shall be reproduced by the software and through that available for project specific adaptations.

- The supplier shall provide appropriate test- and measurement equipment and capacity. At least all tests and measurements specified on drawings and specifications must be executable. External partners may be used, but in-house capacity is preferred.

- A prototype- and prototype-tool-shop should be available for quick and flexible prototype and prototype tool manufacturing. External partners may be used, but in-house capacity is preferred.

**Output from Supplier:**

**General:**

- PM-System procedure implementation.
- Standard-Project-Plan implementation.
- Adequate personnel capabilities and resources in project supporting departments.
- Required engineering- and project supporting-equipment as specified above.

**Project specific:**

- According to ASM main block “The Product Life Cycle with Autoliv”
- Project-Plan
- S-APQP-Plan
- Project-/ launch-performance, products and processes reaching the QCD-targets

**Required Documents:**

- PM-System documentation (as part of supplier Quality Management Manual)
- Standard-Project-Plan (reference is point 1.2. above)
- S-APQP-reporting (General Excel Guideline)
- Project specific documents according to ASM main block “The Product Life Cycle with Autoliv”

**Reference Documents:**

- ASM main block “The Product Life Cycle with Autoliv”
- ASM main block “Supplier Requirements”
- ISO TS 16949/ISO 9001
- AIAG-Manuals APQP and PPAP
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<th></th>
</tr>
</thead>
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<td></td>
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<tr>
<td>Title: Project Management</td>
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Purpose:

♦ To prepare a successful future for Autoliv and their suppliers, Autoliv’s suppliers shall utilize a lean manufacturing system within all of their facilities.

♦ To inform new and existing suppliers about Autoliv's supplier manufacturing system requirements and recommended tools the supplier should use in its manufacturing system.

Input from Autoliv:

♦ Autoliv provides access through ASM to the APS-booklet and a list of reference literature.

♦ Initial introduction and awareness training coordinated through direct Autoliv purchase contact:
  ♦ Management training
  ♦ APS booklet training, concepts and support tools.

Requirements:

♦ The supplier shall implement a lean manufacturing system. (Introduction of lean manufacturing is also part of Autoliv's ASDP (Autoliv Supplier Development Programme)

♦ The supplier shall nominate a lean manufacturing coordinator/champion.

♦ New and existing suppliers, who have not implemented a lean manufacturing system yet, shall establish a lean manufacturing implementation plan.

♦ Autoliv recommends to conduct an initial APS-Survey to establish current level and set priorities.

♦ The supplier shall identify potential manufacturing process improvements. The supplier is encouraged to use the APS-Survey (Autoliv Production System) for that purpose as well.

♦ The supplier should implement internal workshops on the concepts and tools as follows:

**The 8 APS concepts are:**

- Quality First
- Team Work
- 5S
- Standards
- Muda (Waste) Elimination
- TPM

**APS-tools are for example:**

- 5 Why
- Ishikawa diagram
- SPC
- Quality Matrix
- Problem Solving Process
- PDCA-wheel
• JIT
• FMEA
• Employee involvement
• Pareto Diagram
• Six-Sigma
• etc.

♦ Continuous improvement workshops shall be under a programme of regular management review of status, priorities and resources.
♦ The supplier shall implement lean manufacturing indicators with defined targets. Autoliv recommends the use of QOS (Quality Operating System) AS 61

**Output from Supplier:**

♦ Supplier requests training assistance from Autoliv on demand.
♦ Productivity/operational efficiency improvements
♦ Cost reduction proposals
♦ Reduced process variation
♦ Reduction of inventory
♦ Lean manufacturing training- and implementation- plan and -status
♦ Implementation of lean manufacturing indicators

**Required Documents:**

♦ Lean manufacturing training- and implementation- plan and -status
♦ Documentation may be required on any or all aspects on a routine or occasional basis depending upon supplier performance.

**Reference Documents:**

♦ ASM-Product-Life Cycle/“Continuous Process and Cost Improvement”
♦ ASM-Autoliv Supplier Development Programme
♦ AS 61 (Presentation of Continual Improvement Process); AS 61/Appendix form months, AS 61/Appendix form weeks
Autoliv Supplier Requirements
- General Logistic Requirements -

**Purpose:**

To define Autoliv Logistic Requirements: Packaging, Labelling, Contract Requirements, Forecasts and Orders, EDI, Deliveries, and Logistics Audits.

**Input from Autoliv:**

- Forecasts and Orders
- Packaging Specifications
- Autoliv Partner Portal supplier login and password for:
  - access to local Logistic Requirements (APP / Library / Documents / Regional Information ....)
  - access to WEB SUPPLY

**Requirements:**

In this document the word "shall" indicates a requirement and the word "should" indicates a recommendation.

1. **Scope**

Autoliv Logistics Requirements are applicable to all Autoliv suppliers and their sub-contractors.

Additional local logistics requirements are posted on the Autoliv Partner Portal.

Failure to comply with any Autoliv Logistic Requirements should start a Non-Conformance Report (NCM), and the resolution process that follows the ASM "Complaint Reporting and Resolution". This will affect the supplier's On Time Parts Index (OTP) as described in the Autoliv Standard Supplier Rating AS 51.

2. **Packaging**

2.1. **General**

All packaging shall be according to import/export regulations, and approved by Autoliv prior to any delivery. Packaging might be evaluated by qualification tests upon Autoliv’s request.

2.2. **Packaging Specification**

Autoliv and the supplier shall agree upon packaging in the Contract Review and S-APQP. The packaging shall be specified in the Packaging Specification.

It is the supplier's responsibility to ensure delivery of non damaged parts according to the Packaging Specification and to inspect the packaging with regard to suitability before using it.

2.3. **Returnable packaging**

Autoliv favours the use of re-usable standard packaging where applicable.
Autoliv or the supplier shall buy or rent a limited quantity of packaging. If Autoliv owns the packaging the supplier may be charged rent for exceeding quantities.

The responsibility of maintenance and cleaning is to be defined in the Packaging Specification. If not specified, it is the supplier’s responsibility.

Returnable packaging assigned for the defined supply chain is to be used exclusively for Autoliv supplies. In the event of missing or damaged quantities Autoliv shall be notified immediately.

Autoliv may debit the supplier’s account a replacement fee if packaging owned by Autoliv is missing or is damaged due to supplier negligence.

2.4 Disposable Packaging
Disposable packaging is only to be used when considered economically beneficial or when regulations require it.

Any form of disposable packaging (including sub-packaging) shall comply with all international and local recycling regulations. Cartons and pallets shall be of sufficient quality to protect goods in transit.

2.5 Changes of Packaging
Changes of packaging are only possible after agreement from Autoliv and shall be implemented by the supplier after receiving a new Packaging Specification or packaging amendment documentation.

2.6 Substitute Packaging
In the event that substitute packaging cannot be avoided Autoliv shall be sent a written deviation request prior to the delivery. Autoliv shall consider the effects of the deviation and estimate the extra costs from the non-standard process that may be debited to the supplier’s account.

2.7 Packaging weight and size
Individual packaging weight and size shall be according to the Packaging Specification.

2.8 Packaging storage
Packaging shall be stored and maintained dry, clean and usable.

2.9 Pallets
All pallets shall be in perfect condition to ensure stackability and usage without risk.

For intercontinental transports pallets and collars shall comply with ISPM 15.

2.10 Transportation
Pallets shall during transportation be loaded and secured to avoid any kind of damage. Metallic straps are forbidden.

For continental and domestic transports plastic wrapping should be avoided if possible. For intercontinental transports plastic wrapping should be used if applicable.

2.11 Markings
All appropriate marking shall be compliant with local regulations.

3. Labelling
Correct labelling is the supplier’s responsibility. All labels shall be in English to avoid any confusion.

To secure traceability correct labelling is mandatory on each box and on both sides of each individual pallet.

The supplier shall print labels according to the Autoliv Standard Package and Transport Label / AS 244. It includes requirements on approved label layouts, sizes, and the information the labels shall contain. It also declares how to handle mixed components on pallets.

All suppliers can print correct labels by using the WEB SUPPLY application through the Autoliv Partner Portal.

Labelling shall be approved through the PPAP process.

4. Contract Requirements

4.1. Capacity Planning
Capacity planning of tools, production lines, and personnel training needs to be anticipated, achieved and checked by the supplier to meet the required volumes, based on forecasts given by Autoliv.

If the forecasts or orders are showing demands higher than the supplier’s capacity, the supplier shall take immediate contact with the local Autoliv Logistic Department and propose an alternative supply solution.

A defined reserve of production capacity shall be available within a defined lead time at the supplier upon Autoliv request. This should be specified and agreed in the Contract Review and verified through a Run at Rate.

4.2. 24 hours emergency phone number
The supplier shall have English speaking contact persons, and a 24 hours emergency phone number. This contact(s) shall be communicated to the Autoliv Lead Buyer and the local Autoliv Logistic Department.

4.3. Scheduling serial deliveries
Serial production and deliveries shall start only after PPAP approval or interim PPAP approval, and when a valid forecast and order release are available unless specifically required by Autoliv.

4.4. Product Changes and Phase in/out operations
In co-operation with Autoliv the supplier has a responsibility for avoiding obsolete material during phase in/out operations and engineering changes. Focus areas are:
§ Lead time / minimize batch sizes.
§ Constantly monitor changes.
§ Intensify contacts with the local Autoliv Logistic Department.
§ If necessary modify the Packaging Specification.

5. Forecasts and order releases

5.1. General Information
Autoliv strives for giving the supplier as frequent and reliable information as possible. The basis for Autoliv planning is: customer forecasts and orders, and a levelled production. The planning is done locally by each Autoliv plant.

A new forecast or order release shall always replace the previous release. It is the supplier’s responsibility to review the forecasts and order releases and advise Autoliv in case of problems.

5.2 EDI or WEB SUPPLY
Autoliv enforces the use of EDI. If not EDI capable the supplier shall use the WEB SUPPLY application through the Autoliv Partner Portal (APP).

EDI is the preferred communication tool for Autoliv and will be rolled out to the Autoliv plants over time.

Autoliv communicates with EDI as described in the Autoliv Standard EDI Messages (AS 242/1; 2; 3; 4).

5.3 Forecasts and Order Releases
A forecast is a tool for the supplier to plan for material, production and future deliveries. Forecasts and delivery schedules are communicated to the supplier by DELFOR (EDI) as described in AS 242/1.

An order release is a request from Autoliv for a specific material and quantity to be delivered to Autoliv at a defined time. Order releases are sent to the supplier for delivery and are communicated to the supplier by DELJIT (EDI) as described in AS 242/3.

During roll out of EDI and WEB SUPPLY by Autoliv, order releases may be sent to the supplier by fax or e-mail.

6. Deliveries

6.1 General delivery compliance
Autoliv requires 100 % conformance to delivery and service requirements from all suppliers. It is the supplier’s responsibility to ensure that goods are available at the right location on time required by each Autoliv plant, even in the case where Autoliv has defined the forwarding agent. In all cases, the supplier shall make arrangements to have material shipped to meet all required dates even if the supplier is on holiday or shut down. The On Time Parts rating is described in the Autoliv Standard Supplier Rating AS 51.

It is the supplier’s responsibility to inform the local Autoliv Logistic Department immediately of any potential difficulties in meeting delivery schedules to avoid production downtime and/or premium freights.

Autoliv reserves the right to reject any delivery that does not conform to the logistics requirements. Failure to comply may also result in Autoliv debiting the supplier’s account for all incurred costs.

6.2 Premium freights
In the event that premium freights cannot be avoided, the type of transport should be adapted to the emergency situation. The local Autoliv Logistic Department shall receive all necessary information to be able to contact the transport driver at any time (e.g. Premium Transportation
Authorization) and also be informed in advance of the estimated arrival time.

6.3. Deliveries according to FIFO
Autoliv Standard Product Traceability AS 4 defines the supplier’s manufacturing lot/batch size. Deliveries to Autoliv must follow the First-In-First-Out (FIFO) principle in respect to the oldest batch available.

6.4. Documents
Since payment is based on receipt of appropriate documents, a physical printed Delivery Note shall be attached with the delivered material. This documentation is mandatory and shall be 100% complete. The Delivery Note shall contain the necessary information described in AS 242/2.

An electronic Delivery Note (DESADV) shall be mandatory practice for the supplier (to send) if required by Autoliv as described in AS 242/2. In addition an electronic Invoice (INVOIC (self billing)) shall be mandatory practice for the supplier (to receive) if required by Autoliv as described in AS 242/4.

7. Logistic Audit

Autoliv recommends the supplier to use the Logistics Evaluation Report issued by the Odette Organisation (Material Management Optimization Guideline / Logistics Evaluation) for logistic audits.

Output from Supplier:

Acknowledgement of acceptance of ASM (Autoliv Supplier Manual) which includes:
§ Packaging according to Packaging Specifications.
§ Labelling according to AS 244 (Package and Transport Label).
§ Receive and send electronic messages according to (AS 242/1; 2; 3; 4).
§ On Time Parts according to orders.
§ Physical Delivery Note with the delivered material.
§ Logistics documentation (e.g. delivery note, DESADV, EX1 export customs document).
§ Logistics audits and associated improvement action plans.

Reference Documents:

§ Packaging specification (Packaging and Transportation Sheet). (General Excel Guideline)
§ Non Conforming Material Report (NCM) (General Excel Guideline)
§ EDI Messages (AS 242/1; 2; 3; 4)
§ Local Autoliv Logistics Specifications (APP / Library / Documents / Regional Information...).
§ AS 244 (Package and Transport Label)
§ AS 51 (Autoliv Supplier Rating) / Appendix A (AS51 examples)
§ Spare parts standard
§ ISPM 15 (transportation of pallets and collars).
Autoliv Supplier Requirements
- Environment -

Purpose:

To explain the Autoliv environmental requirements.

Input from Autoliv:

- AS 31 (Environmental Policy for Autoliv Inc.)
- AS 5 (Substance Use Restrictions)

Requirements:

Autoliv has established an environmental policy (AS 31) and requires its suppliers to undertake a similar environmental responsibility. For all activities, the supplier shall comply with legal (local, national, and global) environmental requirements.

For a full environmental commitment, our suppliers should implement an Environmental Management System, preferably based on ISO 14001 and to be certified accordingly.

All substances used in production part materials shall be declared electronically in IMDS (International Material Data System). The IMDS declarations shall comply with the IMDS Recommendations published on the IMDS web site (http://www.mdsystem.com) and with the Autoliv Standard, AS 5 (Substance Use Restrictions). AS 5 covers material data reporting requirements and substance use restrictions, for Autoliv and its suppliers.

The supplier shall submit an approved IMDS declaration with the PPAP package. As a consequence, the supplier shall complete the IMDS entry in the IMDS database a reasonable time period before the agreed PPAP-submission-date. Only this procedure will give Autoliv the opportunity to approve the IMDS-entry prior to the supplier’s PPAP submission date. In case Autoliv does not respond to the IMDS declaration before supplier’s PPAP submission date, it is sufficient for the supplier to submit only the IMDS entry confirmation with the PPAP package. PPAP approval can only be done with an approved IMDS Declaration.

Further reporting requirements and guidelines for suppliers about how to declare materials in IMDS are defined in Autoliv IMDS Reporting Guidelines. This guideline is also providing instructions about specific company ID’s for different Autoliv companies.

The substance use restrictions are defined by the Autoliv Standard AS 5 (Substance Use Restrictions). Certain substances (ref.: AS 5; Restricted and Forbidden Substances List) are classified as Restricted or Forbidden. Materials, components, and products containing substances classified as forbidden must not be used. In case a forbidden substance is identified in the course of a development project, the supplier must immediately notify Autoliv. In this case and if the supplier has designed or chosen the material, the supplier must request a deviation approval (Ref. AS 5, Forbidden Substances Deviation Process for Suppliers) using Autoliv’s Waiver Request Form (Ref AS 5, Waiver Request Form) for forbidden substances. Autoliv will perform a review of the received Waiver Request and return it to the supplier with
the decision – approval or disapproval – written on it. The approved Waiver Request shall be included in the PPAP submission, if a forbidden substance is present in supplier designed or chosen the materials. In those cases the PPAP approval can only be done with an approved Waiver Request.

For materials, which were not designed or chosen by the supplier the submission of an AS 5 Declaration or Waiver is not mandatory for PPAP-submission.

 Suppliers to Autoliv companies in Europe must meet the requirements under the European Regulation on Chemicals, REACH. Communication through the supply chain is obligatory. For more information about REACH, see AIG, Automotive Industry Guideline on REACH, published on the ACEA website (http://www.acea.be/).

**Output from Supplier:**

♦ Installation and implementation of an environmental management system according to ISO 14001.
♦ IMDS declaration for all materials.
♦ If applicable: Pre-registration/registration of chemicals to ECHA (European Chemical Agency) via the REACH-IT portal on the ECHA website (http://www.echa.europa.eu/).

**Required Documents:**

♦ PPAP including: Documentation of approved IMDS declaration as a ground rule. A confirmed IMDS declaration in case Autoliv has not responded to the IMDS entry.
♦ If applicable: PPAP including approved AS 5 Waiver Request Form for forbidden substances.

**Reference Documents:**

♦ IMDS (http://www.mdsystem.com)
♦ **AS 5** (Substance Use Restrictions)
♦ **AS 31** (Environmental Policy for Autoliv Inc.)
♦ ISO 14001:2004 Environmental management systems-Requirements with guidance for use
♦ ASM-Supplier Req."Quality Requirements/PPAP"
♦ Autoliv IMDS Reporting Guidelines
♦ AIG (http://www.acea.be/)
♦ ECHA (http://www.echa.europa.eu/)
Autoliv Supplier Requirements
- Supplier Pre-Qualification Process -

**Purpose:**
To inform about the Autoliv procedure to assess and release potential new suppliers.
To inform which minimum requirements a potential new supplier must fulfil.
To describe the Autoliv decision process to select potential new suppliers.

This process shall:
Prevent that orders are given to unacceptable suppliers and/or suppliers with a lack of future potential or missing commitment to Autoliv requirements.
Save and prioritise resources in supplier improvement programmes by filtering unacceptable suppliers.
Support the Autoliv Commodity Team decision taking and strategy implementation.

The Supplier Pre-Qualification Process is the start of the supplier's development to fully comply with all ASM-Autoliv Supplier Requirements.

**Input from Autoliv:**
Introduction presentation about Autoliv
Autoliv requirements in the ASM (Autoliv Supplier Manual).
Information about potential business

**Requirements:**
Participate in the Supplier Pre-Qualification Process and provide requested information.
Support all pre-qualification audits and assessments.
Thorough review and acceptance confirmation of Autoliv requirements in accordance to the Supplier Pre-Qualification Process. Note: A release of a new supplier is always linked to a certain plant/production location. Other supplier plant(s) require(s) a reapplication of the Pre-Qualification-Process.
A process audit according to Autoliv Standard 2 will be performed once the supplier has a process in place for producing Autoliv components.

**Output from Supplier:**
Support of the Pre-Qualification Process.
Provide requested documents and information.

**Required Documents:**
Supplier Fact Profile
ASM-Supplier Acknowledgment Letter
Other specific documents on request.

Reference Documents:

ASM-Main block "Supplier Requirements
Supplier Pre-Qualification-Process
AS 69 - Special Processes - Requirements and Assessments
Confidential Agreement or Confidential Agreement - Mutual Form

The assessment templates for information:

AS 2 - Process Audit File
Autoliv Supplier Pre Qualification Questionnaire
APS-Survey (General Excel Guideline)
Development Process Audit
AS 69 - Heat Treat Assessment File
AS 69 - Plating Assessment File
AS 69 - Coating Assessment File

Latest revision
2009-09-03 13:08:58 Confidential Agreements added to Reference Documents

Revision History

Printed document information
Category: The supplier business cycle with Autoliv
Title: Supplier Pre-Qualification Process
Version: 4
Print date: 10/30/2009 01:22:08 PM
Purpose:

- To explain the ASDP (Autoliv Supplier Development Program).

The ASDP purposes are:

- Autoliv Supply Base evaluation.
- System- and process development of new and existing suppliers. Target is to reach full compliance to all ASM-requirements.
- To proactively improve supplier's process quality and cost to prevent problems and to assure also long-term the best quality and price.
- To improve quality, reliability and efficiency of the Autoliv/supplier collaboration process.

Input from Autoliv:

- Request for participation in ASDP (Autoliv Supplier Development Programme) for selected suppliers.
- Introduction of the ASDP (process, participants, timing etc.) to the selected suppliers.

Requirements:

- The supplier is responsible to participate in the ASDP according to the ASDP-Process-Flow
- The supplier supports and participates in the ASDP diagnosis process and it's audits and road map preparation.
- The supplier sets up specific action and timing plans for all identified improvement areas according to the audit reports and the defined road map.
- The supplier is responsible for the improvement implementation according to the action and timing plans.
- Action and timing plan updates to be provided to the responsible Autoliv Leadbuyer and the Autoliv Supplier Development Manager on a monthly basis.
- Participation in the ASDP review meetings and presentation of investigation results, actions plans etc. according to the ASDP-Review-Guideline.

Output from Supplier:

- According to the ASDP-Process-Flow and the supplier specific action plans.
- Monthly update of agreed key indicators (AS 51 and other)
Required Documents:

- Monthly ASDP-report according to Autoliv Leadbuyer request.

Reference Documents:

- ASDP-Process-Flow
- APS-Workshop-Guideline
- ASDP-Review-Guideline
- Autoliv Supplier Requirements/Quality Requirements
- Autoliv Supplier Requirements/Project Management
- Autoliv Supplier Requirements/Manufacturing System

The assessment templates for information:

- Development Process Audit (General Excel Guideline)
- AS 2 Audit (Checklist)
- APS-Survey (General Excel Guideline)
- APS-Radar-Diagramme
Autoliv Supplier Status Review
- Performance and Profile Evaluation -

Purpose:

♦ To inform the supplier of the methodology of our supplier performance review process, and its affect on the Autoliv-Supplier relationship.

Input from Autoliv:

♦ Supplier AS 51-rating (available on APP)
♦ Supplier Status Review Meeting agenda proposal

Requirements:

♦ The supplier and Autoliv shall follow the Supplier Status Review Process Standard.
♦ Meetings are scheduled based on a number of determining factors.
♦ Responsible participants are requested to attend from supplier and Autoliv.
♦ Preparation is required in advance by the supplier based on an established agenda.
♦ Preparation and presentation on the part of the supplier includes but is not limited to knowledge and detailed understanding of supplier's AS 51-status and improvement action plan, Flag Panel status, Supplier Development status, cost reduction roadmap, new technology/product development plans and previous action plan requests.

The business result of the meeting could be either determining the supplier is:

• GREEN: Autoliv and Supplier need to discuss the ability to maintain and increase the business.
• YELLOW: Autoliv and Supplier agree on a development plan to improve the supplier.
• RED: Autoliv and Supplier agree to eliminate or constructively phase-out the supplier.

Output from Supplier:

♦ Action plans
♦ Financial statements
♦ Cost reduction roadmaps
♦ Technology/new product development information
Required Documents:

♦ Improvement action plans

Reference Documents:

♦ Supplier Status Review Process Standard
The product life cycle with Autoliv
- 1. Project Support and Pre-Quotes on Request -

**Purpose:**

Supplier support of early project phase:
Already before potential suppliers have started official projects, Autoliv expects them to serve the Autoliv project with information and support to facilitate Design for Manufacturing. Autoliv starts its supplier selection process during this project phase.

**Input from Autoliv:**

- DRD (Design Requirement Documents) or product specifications
- Project information: Major project milestones
- Possibly: RFQ (Request for Pre-quote)
- Target costs
- Information of documentation confidentiality, if any

**Requirements:**

- Conduct first project review (e.g. project timing, resource planning etc.)
- Conduct a first product review; e.g.
  - start feasibility study (requirements understood ?, complete ?, achievable ?, applicable? and measurable ?)
  - give information about possible tolerances.
  - are proposed materials o.k. ? Are alternative materials more efficient ?
  - check previous experiences with similar product or process etc.
- Submit feedback to the requirements and any suggestions for improvements.
- Review target costs, submit feedback.
- Supplier respects confidentiality.

**Output from Supplier:**

The potential suppliers provide on request:

- First Feasibility Study (use the Feasibility Study-template; it's part of RFQ and also available as separate form) on Autoliv concepts and ideas.
- Design and process consultation and expertise.
- Pre-quotes (part price, tooling, equipment) on concepts and ideas (use RFQ-form).
- Leadtimes for concept realization.

**Required Documents:**
If requested:

- Feasibility Study-template (General Excel Guideline)
- RFQ-template (General Excel Guideline)
The product life cycle with Autoliv
- 2. RFQ, Quotation and Feasibility Study -

**Purpose:**

- Provide detailed quotations and cost breakdowns based on actual and reviewed Autoliv specifications.
- Declaration of feasibility (Example: requirement not feasible counterproposal requested). "Feasibility" means: Requirements are understood, complete, achievable and measurable.

**Input from Autoliv:**

Project and delivery information provided through RFQ (Request for Quotation):

- Drawings / CAD-models (Computer Aided Design), specifications, standards.
- Necessary Design-FMEA (Failure Mode and Effects Analysis) information.
- If the supplier has full or partial design responsibility: DRD (Design Requirement Documents), BOM (Bill of Material), necessary System-FMEA (Failure Mode and Effects Analysis) information.
- If requested by Autoliv: An audit at the supplier production site.

**Requirements:**

- Complete RFQ-template. To gain consideration RFQ-forms must be completed in their entirety, if nothing else was agreed on by Autoliv.
- Submit cost reduction proposals on the RFQ-template.
- Complete Feasibility Study (is part of RFQ-template):
  1. TFC (Team Feasibility Commitment)
  2. Specification and Drawing Concern-Sheet
     A Team Feasibility Commitment (TFC) (is the first worksheet of the Feasibility Study-template) listing the feasibility agreement status. TFC to be signed by supplier and submitted to Autoliv with each quote. All open issues shall be documented by the supplier on the "Drawing and Specification Concern-Sheet" (is the second worksheet of the Feasibility Study-template).
- Feasibility Study to include a commitment: "Feasible" / "Feasible with proposed changes" / "Not feasible".
- Complete "Cost Analysis-Sheet" (is part of RFQ-form) on Autoliv request.
- Complete "Packaging and Transportation Sheet" (is part of RFQ-form) on Autoliv request.

**Output from Supplier:**

- Quotation (use RFQ-template): part and tooling price, lead times, etc.
- Feasibility Study
Cost Analysis
Packaging and Transport concept

**Required Documents:**

- **RFQ-template** (incl. Feasibility Study template)

on demand: Cost Analysis-Sheet, Packaging and Transportation Sheet) *(General Excel Guideline)*

**Reference Documents:**

For the Feasibility Study:

- **AS 4** (Product Traceability)
- **AS 5** (Material Data Management and Substance Use Restrictions)
- **AS 51** (Supplier Rating) / **Appendix A** (AS51 examples)
- **AS 52** (Product Characteristics Classification), **Appendix B** (cc_sc list)
- **AS 244** (Package and Transport Label)

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Latest revision
06.11.2006 14:52:37  RFQ-template updated. The template now contains the possibility to request ex-works prices and landed prices for various delivery plants. (Reference: Rows 52ff and rows 121ff on Letter RFQ-sheet of the RFQ-template)
The product life cycle with Autoliv
- 3. Supplier Selection / Supplier Project Start -

Purpose:

♦ To award business to the supplier.
♦ To initiate the supplier's project start.

Early supplier selection should ensure, that the serial supplier's project involvement and cooperation in projects starts immediately.

Background for this is, that Autoliv needs and expects the Supplier's expertise and support to ensure, that the project, the product and process become optimized with regard to cost, quality, delivery and feasibility.

Input from Autoliv:

♦ After quotation review (including Feasibility Study) and supplier selection: Confirmation of business award: e.g. Letter of intent / serial commitment.

Requirements:

Before the supplier is selected:

♦ Supplier shall have accepted the ASM (Autoliv Supplier Manual), not be rated RED on the Commodity Flag Panel and must not have continuously unacceptable AS51 ratings or major open issues from audits to be awarded business.
♦ Supplier shall have completed the Feasibility Study: Major feasibility concerns and design change requests must be agreed on by Autoliv before supplier selection. (Reference: Step 2/ASM-Product-Life-Cycle).

After supplier selection:

♦ Suppliers may expect to receive either a “letter of intent”, a serial commitment or other from Autoliv.
♦ As a result Autoliv expects the supplier's commitment to start an official project supporting the milestones by providing the needed resources, services, capital, equipment etc. to meet the Autoliv requirements. For Project Management requirements, reference is made to the Autoliv Supplier Requirements/Project Management

Output from Supplier:

♦ Sign-off of TFC (Team Feasibility Commitment).
♦ Commitment to latest status of Feasibility Study and action plan (use TFC and Drawing and Specification Concern-Sheet).
♦ Identification of project leader and team.
♦ Release of supplier project and start of project plan.

**Required Documents:**

Feasibility Study:

♦ TFC signed-off
♦ Drawing and Specification Concern-Sheet

**Reference Documents:**

♦ ASM-Main block "Supplier Requirements"

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Printed document information
Category: The product life cycle with Autoliv
Title: 3. Supplier Selection / Supplier Project Start
Version: 1
Print date: 10/30/2009 01:22:11 PM
The product life cycle with Autoliv
- 4. Control Level Definition and Start of APQP-Process -

**Purpose:**

- CLD (Control Level Definition): Autoliv is assessing and rating the project risk based on the selected supplier, the product and the process criticality. This is determining the level of control and follow-up from Autoliv and supplier side during the project, as defined in the "Control Level Definition Standard".
- Launch the Product Quality Plan-process through the use of APQP (Advanced Product Quality Planning).

APQP is a structured method of defining and establishing the minimum steps and requirements necessary to ensure that the product satisfies the Autoliv requirements and to assure that all required steps are completed on time.

**Input from Autoliv:**

- Information about the determined Control Level Definition (CLD) and resulting reporting requirements. (Check "Control Level Definition Standard")
- Autoliv key milestones.
- Support and participation (on request) in setting up and updating the supplier project timeline synchronized with the Autoliv key milestones. (Project-Synchronization)
- S-APQP-reporting frequency.
- CC/SC’s and preliminary drawings and specifications and the necessary D-FMEA (Design Failure Mode and Effects Analysis) information.

**Requirements:**

1. **For all projects - CLD 1, 2 and 3:**
   (Ref.: "Control Level Definition Standard")

   - Establish the supplier S-APQP-process and the supplier project plan based on the synchronized project timeline.
   - Follow the project plan, the S-APQP-process and execute the project controlling in line with supplier internal and ASM (Autoliv Supplier Manual) requirements.
   - Problem and potential risk analysis.
   - In case of any problems or deviations of demands vs. expected results (risks for project's timing and/or quality) the supplier shall inform Autoliv immediately (in writing) and provide problem analysis and recovery plan proposal.
   - Initiate and maintain continuous update of S-APQP-template.
   - Report APQP-progress and submit the S-APQP-template according to defined frequency.

2. **Additional S-APQP requirements for CLD 2 projects**
   (Ref.: "Control Level Definition Standard")
The supplier and Autoliv shall conduct S-APQP review meetings.

3. Additional S-APQP requirements for CLD 3 projects
(Ref.: "Control Level Definition Standard")

The supplier and Autoliv shall conduct S-APQP review meetings at supplier site

Output from Supplier:
For all projects:

- S-APQP established and reporting started
- Supplier Project-Plan
- Problem and potential risk analysis and recovery plan, if applicable.

Required Documents:

- S-APQP-template (General Excel Guideline)
- Supplier Project-Plan on request.

Reference Documents:

- AIAG-Manual APQP
- Control Level Definition Standard (CLD)

Latest revision
10/17/2008 08:08:39 Corrected links to Control Level Definition Standard AM

Revision History

Printed document information
Category: The product life cycle with Autoliv
Title: 4. Control Level Definition and Start of APQP-Process
Version: 3
Print date: 10/30/2009 01:22:11 PM
The product life cycle with Autoliv  
- 5. Contract Review Process -

**Purpose:**

- Contract, design and process review before serial/tool order to prevent problems and misunderstandings.
- Intention is to make sure the Autoliv requirements and specifications are met.
- To involve suppliers early enough to be able to introduce changes to improve QCD (Quality, Cost and Delivery). *(before design freeze!)*
- To agree on all technical and commercial aspects of the business.

**Input from Autoliv:**

- Project information from previous process steps.
- For CLD 2 and CLD 3 projects *(Ref.:"Control Level Definition Standard")*, a Contract Review process is started by Autoliv and a review time plan is provided.
- Updates of drawings, specifications and standards.
- Delivery and packaging aspects, volumes, ramp-up, PPAP-requirements (Production Part Approval Process), special testing and gauging requirements (if any), AS 412 (Interim Inspection Plan).
- Autoliv or customer directed sourcing requirements, if applicable.
- Information from previous lessons learned with same or similar products and processes.
- Collaboration with supplier to resolve all feasibility and product review open issues.

**Requirements:**

1. **For all projects the supplier must ensure:**

   - That all feasibility and product review open issues are resolved before serial order (e.g. tool order etc.).
   - That updated feasibility study and impact on product cost and timing for any design change is provided, when necessary.
   - Review of own and Autoliv provided lessons learned with same or similar products and processes and definition of appropriate actions.
   - Identification and preparation of material-, machine-, man-power- and other requirements to support the ramp-up plan.
   - Compliance with Autoliv source directed requirements, if any.

2. **For CLD 2 and CLD 3 projects** *(Ref.:"Control Level Definition Standard")*, a Contract Review process is started by Autoliv. The requirements for suppliers to actively support this process are:
♦ Appropriate supplier representatives participate in the review process and attend the meetings.
♦ Supplier prepares and provides necessary information (i.e. preliminary tool design and Process-Flow-Chart, process layout etc.) for the meetings.
♦ Actively support the supplier deliverables in the Contract Review Process (use the Contract Review -template).
♦ Finalization and completion of Contract Review Process before serial order (e.g. tool order etc.) :
  - All Contract Review open issues should be closed.
  - For any open issues not closed an approved action plan, which supports the project time line shall be available.
  - Both parties (Autoliv and supplier) commit, agree and sign-off the "Contract Review" -document.

Output from Supplier:
♦ Completed Feasibility Study process: All open issues from the Feasibility Study (ref.: Drawings and Specifications Concern Sheet) are resolved before Autoliv Design Freeze and serial order.
♦ For CLD 2 and CLD 3 projects (Control Level Definition Standard):
  - Pro-active support of Contract Review Process.
  - Update of Contract Review document, if requested by Autoliv.
♦ Action plan on any open issues.

Required Documents:
♦ Feasibility Study (General Excel Guideline)
♦ Contract Review (General Excel Guideline)

Reference Documents:
♦ Control Level Definition Standard (CLD)
♦ PPAP-Submission-Index (General Excel Guideline)
♦ AS 5 (Material Data Management and Substance Use Restrictions)
♦ AS 244 (Package and Transport Label)
The product life cycle with Autoliv
- 6. Prototype Order and Delivery -

**Purpose:**

Prototype parts are parts used for Autoliv prototype builds, Design Validations or engineering evaluations.

Documented data is required to support further investigation and verification of final assembled product performance and capability over the whole tolerance range.

**Input from Autoliv:**

- Prototype purchase order including list of requirements (required level of prototype documentation, sample quantity, leadtime, labelling, packaging, prototype drawing and specifications etc.).
- Feedback from Autoliv's prototype reviews and tests on request.

**Requirements:**

Supplier chosen for prototype delivery shall submit prototypes with prototype documentation as requested by Autoliv.

Prototype Documentation may consist of the following, but not limited to:

- Cover page
- Dimensional Report (use the QS-9000 form „Production Approval /Dimensional Results”).
- Material Certificate
- Checking Aids (make a list of measurement equipment and gauges and reference to product characteristics).
- Test Results (use the QS-9000 form „Performance Test Result”).
- Appearance Approval Report (use the QS-9000 form “AAR”).
- Action Plan for deviations.

The prototype manufacturing process should be controlled by a Prototype Control Plan.

Prototypes, which do not meet the prototype drawings and specifications, the supplier shall clearly describe the deviations.

Prototypes shall be marked and traceable to the sample’s manufacturing- and sub-component lots.

The prototypes should be (as much as possible) produced using serial technology and manufacturing process if not otherwise defined by Autoliv.

Further requirements should be defined at the time of prototype order.

Limit / margin / borderline parts on identified critical and significant characteristics (CC/SC) on
This is required to prevent quality and functional problems during the life time of the product related to normal lot to lot variation within the defined tolerances. **The whole range of variation within the defined tolerances** needs to be evaluated.

**Output from Supplier:**

- Prototype samples (incl. specific marking/labelling)
- Prototype documentation

**Required Documents:**

- Prototype-documentation (use the AIAG-Manual PPAP-templates) as defined through Autoliv’s prototype purchase order.

Optionally Autoliv standard forms can be used:
1. Prototype Sample Cover Page
2. Dimensional Results
3. Checking Aids
4. Test Results
5. Appearance Approval Report
6. Action Plan for deviations

(General Excel Guideline)

**Reference Documents:**

- AIAG-Manual PPAP (Production Part Approval Process)
The product life cycle with Autoliv
- 7. Production-Trial-Runs -

**Purpose:**

- To demonstrate that the process has the capability to produce products that consistently meet all drawing requirements and specifications at the requested production rate.

- To ensure that the supplier can successfully meet this requirement on time before SOP (Start of Production) Autoliv requires:
  
  • First-Production-Trial-Run
  • PPAP-Production-Trial-Run
  • Run at Rate

- To ensure, that the supplier can submit PPAP (Production Part Approval Process) on time, complete and „right the first time“ the First Production-Trial-Run and implementation of resulting corrective actions before PPAP-Production-Trial-Run is required.

- Any deviation from the following rules/requirements needs a project specific approval by Autoliv.

**Input from Autoliv:**

- AS 412 (Interim Inspection Plan)

**Requirements:**

Depending on the defined "Control Level Definition Standard":

- CLD 1 : Production-Trial-Runs and documentation is mandatory.
- CLD 2 : Production-Trial-Runs and documentation is mandatory and to be submitted.
- CLD 3 : as CLD 2 plus Autoliv participation at supplier's Production-Trial-Runs.

- The "Production-Trial-Run-Standard" lines out the timing requirements, the demanded Production-Trial-Run content, conditions and documentation.

- The length of time between the trials should be considered in the project time plan and included in the S-APQP (from project start on) and provide adequate time for correction of deviations. The time length is defined supplier-, project-, and process specific and shall be integrated into the S-APQP-Report.

- Any deviations must result in an approved action plan supporting the project time line.
If the First-Production-Trial is done under serial production conditions and the results meet the PPAP-requirements, these results can be used for the PPAP-Production-Trial-Run and for PPAP-submission. The decision to skip the PPAP-Production-Trial-Run or any of its contents, may only be taken after the First Production-Trial-Run has been executed as scheduled and the actual results confirm such decision.

If the PPAP-Production-Trial-Run (according to Production-Trial-Run-Standard) satisfies the Run at Rate requirements, the PPAP Production-Trial can be counted as a Run at Rate in agreement with Autoliv.

Parts produced in the Production-Trial-Runs are manufactured at suppliers risk. If parts are at PPAP-approved engineering level, they can be sold.

All parts ordered from Production-Trial-Runs shall be sold at serial price.

**Output from Supplier:**

For CLD 2 and CLD 3:

- measure and document all drawing and specification characteristics
- conduct a capability-study (reference: AS 52)
- conduct and document a process quality audit (use "Production-Trial-Run Checklist")
- conduct and document a production capacity evaluation (use Production Trial Capacity Report)

according to the agreed project time line.

**Required Documents:**

- Dimensional-Report (use AIAG-manual form), optional use Autoliv-form : "Dimensional Report" (General Excel Guideline)
- Capability Study: No specific form required.
- Production-Trial-Run Checklist (General Excel Guideline)
- Production Trial Capacity Report (General Excel Guideline)

**Reference Documents:**

- Production-Trial-Run-Standard
- AIAG-Manual APQP
- AIAG-Manual PPAP
- AS 52 (Product Characteristics Classification)
- Control Level Definition Standard
The product life cycle with Autoliv

- 8. PPAP -

**Purpose:**

Is to determine, if Autoliv specifications and requirements are properly understood and that the manufacturing process has the potential to produce products consistently meeting these requirements under consistent (normal) production conditions.

**Input from Autoliv:**

- PPAP-request „PPAP-Submission-Index“ (PPAP-submission date, PPAP-Level etc.).
- Autoliv released drawings and specification.
- PPAP checklist (if requested by Autoliv)

**Requirements:**

- Check general requirements for PPAP in AIAG-Manual PPAP and in ASM section „Autoliv Supplier Requirements/Quality Requirements“.
- All submitted PPAP-documentation must be in English.
- PPAP desired format is electronic file.
- PPAP-submission on time and according to PPAP-request.
- PPAP-Submission Index—template filled out and submitted with PPAP-documentation.
- Only if PPAP is 100% complete and o.k. it should be submitted to Autoliv. In case supplier will request an interim approval, the "Interim Recovery Worksheet" shall be submitted before PPAP. For any deviations an approved action plan supporting the project time line is required before submitting the PPAP.
- **The PPAP-Approval is not a delivery signal.** The supplier shall wait for further delivery information/schedules.

**Output from Supplier:**

- PPAP-Submission on time and "right the first time"

**Required Documents:**

The PPAP-package shall consist of:

- 1. **PPAP-Submission-Index-template:** Listing the requested and submitted documentation.
- 2. PPAP-documentation according to the PPAP-Level defined in the PPAP-request (use AIAG-Manual PPAP-forms)
- 3. Autoliv specific submission documents as defined in the PPAP-Request (Section 17 4 of PPAP-Submission-Index-template).
- 4. **PPAP Checklist** (if requested by Autoliv)
Optionally Autoliv PPAP-standard forms can be used:
1. Design Records (Drawing Specifications...)
2. Engineering Change Documents: "Supplier Request for Engineering Approval"
3. Customer Engineering Approval
4. Design Failure Mode and Effect Analysis (Design FMEA)
5. Process Flow Diagrams (no specific form required)
6. Process Failure Mode and Effects Analysis (Process FMEA)
7. Control Plan
8. Measurement System Analysis Studies
9. Dimensional Results
10. Records of Material/Performance Test Results
11. Initial Process Studies (no specific form required)
12. Qualified Laboratory Documentation (no specific form required)
13. Appearance Approval Report
14. Sample Production Parts (no specific form required)
15. Master Sample (no specific form required)
16. Checking Aids
17. Autoliv specific requirements (as applicable):

17.1. AS 5-Waiver Request Form
17.2. Sample of an AIAG label per AS 4 and AS 244
17.3. Manufacturing lot traceability flow diagram per Autoliv AS 4
17.4. Are heat treatment audits (if required) included (Ford format desired or compliant to CQI-9 unless otherwise requested) < 1 year old
17.5. Copy of the packaging instructions
17.6 Copy of the Tool Asset Form sent to the proper party/location (if applicable)
If applicable (for interim approval): Interim Recovery Worksheet

18. Part Submission Warrant (PSW)
(--> General Excel Guideline for using excel templates)

Reference Documents:

♦ AIAG-Manual : APQP, PPAP, SPC, MSA
♦ AS 5 (Material Data Management and Substance Use Restrictions for Autoliv Inc.)
♦ AS 52 (Product Characteristics Classification)
♦ AS 105 (P-FMEA = Potential Failure Mode and Effects Analysis in Manufacturing and Assembly Processes)
♦ AS 244 (Package and Transport Label)
♦ "ASM Supplier Requirements/Quality PPAP"
♦ "ASM Supplier Requirements/Logistic"
♦ "ASM Supplier Requirements/Environment"

Latest revision
2009-09-11 07:32:39 17.1.6 Tool Asset Form added. PPAP checklist is updated with regards to this as well.
The product life cycle with Autoliv
- 9. SOP = Start of Production and Serial Deliveries -

**Purpose:**
To communicate requirements for first and ongoing production deliveries.

**Input from Autoliv:**
Delivery orders can be communicated through (i.e. EDI, APP (Autoliv Partner Portal)):
- Delivery schedules (call-offs) and/or Kanban- or Pull-signal

**Requirements:**
- After PPAP-approval the supplier ships according to the received delivery information.
- Any deviations from the above has to be approved by the using Autoliv facility.
- In case of actual or potential delay in delivery (i.e. due to a lack of capacity), the supplier shall inform the production control department of the receiving Autoliv plant and, if applicable other Autoliv subcontractors (e.g. transport) immediately. An action and recovery plan is required.
- Invoicing and payment terms and conditions are defined on a local level, unless otherwise agreed.
- For further logistic requirements, reference is made to the ASM main-block „Supplier Requirements/General Logistic“

**Output from Supplier:**
On time deliveries according to delivery information in the right quantity and fulfilling all requirements.

**Required Documents:**
- According to local requirements (e.g. ASN (Advanced Shipping Notice) etc.).

**Reference Documents:**
- ASM main-block „Supplier Requirements/General Logistic“
- AS 244 (Package and Transport Label)
- RFQ („Packaging and transportation“-sheet) (General Excel Guideline)
- Contract Review (General Excel Guideline)
- Purchase order
- Local/divisional logistic requirements
The product life cycle with Autoliv
- 10. Performance Review / APQP-Closure -

**Purpose:**
- Eliminate risks to ensure 100% successful launch and serial production.
- Ensure 100% of APQP (Advanced Product Quality Planning) activities are closed.

**Input from Autoliv:**
- AS 51 (Supplier Rating) results. (Note: All supplier factories are rated by all receiving Autoliv plants.)
- Complaint reports, if any.

**Requirements:**

1. **Supplier Launch Performance Review:**
   - Perform a launch and process review.
   - Follow-up any specified project QCD-targets (Quality/Cost/Delivery), (i.e. production efficiency, failure rates, delivery performance, customer feedback etc.) and implement actions for any non-conformities.
   - Monitor early production containment (AS 412 Interim Inspection Plan) actions (if requested by Autoliv). If problems occur, define further countermeasures until problems are solved.
   - AS 412 actions can not be terminated before written approval from Autoliv has been issued.

2. **Closure of APQP (Advanced Product Quality Planning):**
   - All open APQP issues shall be resolved and closed.
   - All Lessons Learned shall be identified, documented and implemented and if requested shared with Autoliv.
   - For all projects the S-APQP-template shall be completed and submitted to Autoliv.

3. **Continuous Performance Monitoring:**
   - For continuous performance monitoring the supplier shall follow the AS 51 requirements and set up further relevant key indicators. "Supplier Requirements/Manufacturing System".
   - All AS51 and other relevant key indicators and referred action plans must be available for Autoliv review upon request.
   - Note: Supplier should carefully review his AS 51-results on monthly basis. If supplier cannot reproduce or does not agree to the AS 51-results submitted by Autoliv, he should...
answer to Autoliv immediately by using the AS 51 Dispute form.

Output from Supplier:

♦ Zero-defects.
♦ Quality performance according to specifications.
♦ 8 D reports and action plans for any non-conforming issues.
♦ 100% on time deliveries.
♦ Closure of S-APQP.

Required Documents:

♦ Submission of closed and signed off S-APQP. (General Excel Guideline)

Reference Documents:

♦ AS 51 (Supplier Rating) / Appendix A (AS 51 Examples)
♦ AS 51 Targets and Tresholds
♦ AS 51 Dispute form
♦ AS 51 Dispute form (pdf version if the excel version cannot be opened)
♦ AS 51 Training
♦ AS 412 (Interim Inspection Plan) / AS 412 Appendix A - IIP Result Sheet
♦ AS 412 Appendix A - IIP Result Sheet as pdf
Purpose:

By effective continuous improvement the supplier shall

♦ Improve quality level
♦ Improve delivery reliability and
♦ Reduce the costs for supplier and Autoliv.

Input from Autoliv:

♦ Supplier Rating /AS 51.
♦ ASDP (Autoliv Supplier Development Programme) feedback and support.
♦ VE/VA-support. (VE/VA = Value Engineering/Value Analysis)
♦ Training on request (e.g. APS (Autoliv Production System), etc.).
♦ Future business plans and road maps (incl. target costs, volumes etc.).

Requirements:

1. **Continuous improvement on product manufacturing process**
   Potential manufacturing process improvements shall be identified. Supplier is encouraged to use the APS-Survey (Autoliv Production System) [APS-Survey-template](#) for that purpose. The supplier can also use the [APS-booklet](#) to implement internal workshops (including methods such as 5S audit, SMED, TPM, Just In Time).

   Continuous improvement workshops shall be under a programme of regular management review of status, priorities and resources.

   The supplier shall actively be engaged and take the initiative in the [Autoliv Supplier Development Programme](#) (ASDP).

2. **Continuous improvements on product design and performance**
   The supplier has the expertise of its technology and is strongly invited to suggest design changes to improve the product cost, quality, process and performance. Any proposal must be submitted in writing in accordance with local requirements.

Process:

The supplier contacts Autoliv for a preliminary feasibility review. After that the supplier issues an engineering or process change proposal in writing through the SREA-template. After Autoliv approval, the process or engineering change can be initiated.

All changes require a review of applicable items from step 4 onwards "Control Level Definition Standard/ Start of APQP-Process".
Output from Supplier:

--> Process and Product Cost Reduction

--> Continuous improvement on product manufacturing process:

- Potential improvement identification and associated action plans.
- Improvements on AS 51 results and other process key indicators.

--> Continuous improvements on product design and performance:

- Engineering change proposals (leading to cost and/or performance improvements).
- Change projects managed according to ASM-project phase definitions (Step 4 to 10).
  "Control Level Definition Standard/Start of APQP-Process" and follow the SREA-process.
  (Ref.. AIAG-Manual PPAP).
- Information about technical innovations and trends.

Required Documents:

- Engineering Change Proposals "Supplier Request for Engineering Approval"-template.
  (General Excel Guideline)
- For engineering change processing: documents as required in ASM-project phase definitions (Step 4 to 10).
  "Control Level Definition Standard/Start of APQP-Process"

Reference Documents:

- AIAG-PPAP-Manual and form "Supplier Request for Engineering Approval". Alternative use the Autoliv-template:
  "Supplier Request for Engineering Approval"-form (General Excel Guideline)
- "ASM-Supplier Requirements/Manufacturing System".
- Recommended reference document: APS-booklet

Latest revision
02.11.2004 16:03:48  Add to :"Output from Supplier: Process and Product Cost Reduction"
The product life cycle with Autoliv
- 12. EOP = End of Serial Production and Spare Parts -

Purpose:
To inform about the Autoliv requirements and procedures for product phase out and spare part management after EOP (End of serial Production).

Input from Autoliv:
- EOP-notification.
- Autoliv Spare Part Standard

Requirements:
- After EOP the supplier transfers the product into his spare part management process.
- Supplier implements and maintains spare part procedures satisfying the "Autoliv Spare Part Standard"
- Document retention according to "ASM Supplier Requirements/General Quality Requirements".

Output from Supplier:
- Spare part deliveries, information and procedures according to "Autoliv Spare Part Standard"

Required Documents:
- According to "Autoliv Spare Part Standard".

Reference Documents:
- "Autoliv Spare Part Standard"
- "ASM Supplier Requirements/General Quality Requirements"
- "ASM Supplier Requirements/General Logistic"
Purpose:

Inform about the Autoliv requirements and procedures for spare part management after EOP (End of Serial Production)

Input from Autoliv:

♦ EOP-date-notification, considering the material and process leadtime
♦ Information, if spare parts are required or not for any and all Autoliv facilities.
♦ Predefined spare parts stock level before completion of series production, if applicable.
♦ A forecast about the quantity after EOP: Possibly a definition of all-time requirement.
♦ Information about packaging requirements or delivery address changes.
♦ Purchase orders for spare parts

Requirements:

♦ Spare parts must be available for minimum 15 years after EOP or longer if individually defined.

Note: For special electronic components individual requirements can be applicable.

♦ Autoliv expects the supplier to deliver spare parts not later than 30 days after notification or as agreed
♦ Serial pricing is required for a period of five years after EOP if not otherwise agreed with Autoliv.
♦ To fulfill Autoliv’s leadtime requests the supplier needs to maintain necessary stock levels.
♦ Any product, process, material and sub-supplier change request must be pre-approved by Autoliv.
♦ PPAP procedure according to "ASM Supplier Requirements/PPAP"
♦ Tools, fixtures, gages and other equipment may not be scrapped without written Autoliv approval.
♦ Tools, fixtures, gages and other equipment maintenance and refurbishment remains under the responsibility of the supplier.
♦ Packaging to be defined between supplier and Autoliv.
♦ Supplier shall inform about minimum lot size requirements in advance, if any.
♦ Spare parts may not be sold to third parties without written Autoliv approval.
♦ The performance for supply of spare parts is monitored under the same quality and delivery requirements as serial parts. Reference: AS51.
♦ Claims for excess material, products, equipment etc. must be submitted to Autoliv with supporting documentation no later than 60 days after EOP.

Output from Supplier:
• PPAP-approval according to "ASM-Supplier Requirements/Quality Requirements".
• Information about any changes linked to the above requirements (manufacturing process, tool or equipment, material, packaging and about any transfer to other location etc.)
• Obsolescence claims (e.g. obsolete stock), if any.
• Spare part quality and delivery performance according to Autoliv specified requirements.

**Required Documents:**

Same as for serial deliveries

**Reference Documents:**

• "ASM-Supplier Requirements/Quality Requirements"

Printed document information
Category: The product life cycle with Autoliv
Title: Autoliv Spare Parts Standard
Version: 1
Print date: 10/30/2009 01:22:16 PM
Purpose:
To communicate, document, track and solve supplier product quality and delivery problems.

Input from Autoliv:
NCM (Non Conforming Material Report) and corrective action plan (8D-Report) request.

Requirements:
Every time a product quality or delivery concern is identified:

1. Quality concerns:

- Autoliv reports to the supplier a Non Conforming Material (NCM)
- The supplier must conduct an immediate investigation:
  - To locate and contain the potentially defective parts in the supply chain.
  - To ensure that the problem will not cause delivery failure or production line stop at Autoliv.
  - To specifically mark all deliveries with sorted parts shipped to Autoliv. Certified (100% o.k. parts) deliveries must be marked according to Autoliv instructions.
  - To implement a backlog recovery plan.
  - The containment action plan must be sent to Autoliv quality department immediately (standard time is defined in Escalation Model / Step 1) or in accordance with the NCM-requirements (Non Conforming Material).

- The supplier must respond in writing in a timely manner (time is defined in Escalation Model / Step 1) using the 8D-discipline (item 1 to 3). The recommended form is the 8D-Report, if not otherwise agreed with Autoliv.
- The supplier reports corrective actions (timing according to in Escalation Model / Step 1) after the NCM (Non Conforming Material Report) receipt using the 8D-discipline (item 4 to 5). The recommended form is the 8D-Report, if not otherwise agreed with Autoliv.
- The supplier reports the problem preventive actions and 8D-discipline closure (8D-item 6 to 8):
  - Problem resolution is confirmed through ongoing confirmation and verification of corrective actions.
  - P-FMEA (Process Failure Mode and Effects Analysis), Control Plan and other affected documents are updated.
  - Follow-up of results (f.i. through tracking of any re-occurrences).
- In case the supplier requests a deviation approval he should contact the local Autoliv SQE and use local templates, if available.
2. **Delivery concerns:**

- Autoliv reports to the supplier a Non Conforming Material Report (NCM).
- The supplier must respond in writing in a timely manner using the 8D-discipline. The recommended form is the **8D-Report**, if not otherwise agreed with Autoliv.

3. **Important notes:**

In case the supplier detects a quality or delivery problem that may involve a product that has been shipped or is scheduled to be shipped and could disrupt supply, they are to notify Autoliv immediately.

The supplier and his sub-supplier shall provide Autoliv with full documentation access.

Premium freight, quality cost, production stops, sorting actions, scrap, etc. and other consequences, will be charged to the supplier.

**Output from Supplier:**

- Number of actual defective parts after sorting (important for correct **AS 51** calculation).
- Containment actions, problem solving and preventive actions.
- Shipment information according to Autoliv instruction.
- Backlog recovery plan.
- On-site support at Autoliv.

**Required Documents:**

- 8D-discipline reporting. The recommended form is the **8D-Report**, if not otherwise agreed with Autoliv. ([General Excel Guideline](#))
- Backlog recovery plan.

**Reference Documents:**

- **Autoliv Escalation Model**
- **AS 63** (Problem Solving Process)
- "**ASM Supplier Requirements/Quality Requirements**"
- Non Conforming Material Report (NCM)
The product life cycle with Autoliv
- 14. Autoliv Escalation Model -

**Purpose:**

To involve the supplier and Autoliv management ensuring that the necessary priorities and resources are dedicated to the problem resolution.

**Input from Autoliv:**

- It is the Autoliv expectation that problems are solved without any escalation.
- Communication to the supplier will be made according to the Autoliv Escalation Model steps.

**Requirements:**

- Requirements and resulting actions are defined in the Autoliv Escalation Model.
- Any other actions (process audit, capacity or logistic audit, third party actions, etc.) Autoliv may direct as necessary.

**Output from Supplier:**

- According to Escalation Model.
- Any other additional outputs as required by Autoliv.

**Required Documents:**

- According to Escalation Model.

**Reference Documents:**

- Escalation Model
- Supplier Performance (AS 51) Improvement
- AS 63 (Problem Solving Process)
- AS 51 (Supplier Rating) / Appendix A (AS51 examples)

Latest revision
15.12.2005 13:28:15 ASPP-Serial Sourcing Process / ASM-Chapter 14: Escalation Model was updated:
"Escalation-Step 4" -actions were replaced by a reference to the "Supplier Performance (AS51) Improvement" Standard.
Purpose:

To assure that the supplier identifies systemic problems (repeat problems, unacceptable AS 51 performance) and assign adequate resources to permanently eliminate the problems and their root causes.

The Quality and Delivery Review is a reaction to existing quality and delivery concerns. For long term, proactive system and process improvements the ASDP (Autoliv Supplier Development Programme) will be initiated by Autoliv.

The information resulting from these actions are forwarded to the commodities and will have a strong influence on sourcing decisions. "ASM - Autoliv Supplier Status Review / Business Results"

Input from Autoliv:

- AS 51-results and other, additional data
- Assignment and priority of resources

Requirements:

If a supplier shows repeat problems or unacceptable AS 51 performance and after a supplier identification process Autoliv starts a Supplier Performance (AS 51) Improvement-Program. The program start/end criteria, the program-flow, consequences and the Autoliv and supplier responsibilities are defined in the Supplier Performance (AS 51) Improvement -Standard.

Attendance of appropriate supplier senior management is required as requested by Autoliv. Supplier shall prepare by establishing a consolidated problem analysis including identification of systemic problems and action plan.

Note: Supplier should carefully review his AS 51-results on monthly basis. If supplier can not reproduce or does not agree to the AS 51-results submitted by Autoliv, he should answer to Autoliv immediately by using the AS 51 Dispute form. It is important, that the supplier agrees questioned AS 51-results with Autoliv before any AS51-Improvement-Program-Meeting is held.

During the Supplier Performance (AS 51) Improvement -Program the supplier problem analysis, the 8D reports, AS51 results and any other relevant data are reviewed together with the supplier.

Corrective action workshop(s) may be required, if the supplier's current corrective actions do not satisfy Autoliv's expectations. This is to be decided during the program.

If the supplier can not meet the agreed targets or results agreed upon in the improvement program, the responsible Autoliv Commodity Manager sets the supplier "On Hold", which blocks the supplier for any new business. Reference is made to the Supplier Performance (AS 51) Improvement -Standard.
**Output from Supplier:**

- Commitment and prioritization of resources.
- Problem resolution action plan.
- Improved AS 51 result > 85% overall rating.

**Required Documents:**

- AS 51 results
- Any other operational indicators previously identified
- 8D-Reports
- Problem resolution action plan

**Reference Documents:**

- Supplier Performance (AS 51) Improvement
- "ASM-Autoliv Supplier Status Review/Business Results"
- "ASM-Supplier Requirements/General Quality Requirements"
- AS 51 (Supplier Rating) / Appendix A (AS 51 examples)
- AS 51 Targets and Thresholds
- AS 51 Dispute form
- AS 51 Dispute form (pdf version if the excel version cannot be opened)
- AS 51 Training

Latest revision
10/20/2008 01:56:33  Added AS 51 Dispute form in pdf to the Reference Documents list.
PM

Revision History

Printed document information
Category: The product life cycle with Autoliv
Title: 15. Quality and Delivery Review
Version: 7
Print date: 10/30/2009 01:22:17 PM
Purpose:
To guarantee the supply of quality products, delivered on time, at the best price to Autoliv and after all other previous corrective actions with the current supplier have failed.

Result:
The product is re-sourced to another supplier and the commodity sourcing strategy is revised.
Reference Document List

In the "Reference Document List" there you find ASM-referenced documents sorted alphabetical by "Templates", "Autoliv Standards", "Other Standards" and "Local documents".

Latest revision
2009-09-24 16:23:10  Local documents added

Revision History

Printed document information
Category: Reference Documents
Title: Reference Documents
Version: 6
Print date: 10/30/2009 01:22:18 PM
- Reference Document List -

If you have trouble opening the links, despite turned off pop-up blockers, try to press Ctrl for several seconds at the same time you click on the link.

1. Templates:
   - Appearance Approval Report
   - APS-booklet
   - APS-Radar-Diagramme
   - APS-Survey
   - ASM-Supplier Acknowledgement Letter
   - AS 2 Audit (Process Audit File-Questionnaire)
   - AS 5 - Waiver Request Form
   - AS 51 - Examples (App.A)
   - AS 69 - Heat Treat Assessment file
   - AS 69 - Plating Assessment file
   - AS 69 - Coating Assessment file
   - AS 412 - IIP Result Sheet
   - AS 412 - IIP Result Sheet in pdf version
   - Checking Aids
   - Contract Review
   - Development Process Audit
   - Dimensional Results
   - AS 63 - 8D-Report
   - Feasibility Study
   - Interim Recovery Worksheet
   - Non Conforming Material Report (NCM)
   - Packaging Specifications
   - PPAP Submission Index
   - PPAP checklist (if requested by Autoliv)
   - PPAP-documentation (use AIAG-Manual PPAP-forms)

Optionally Autoliv standard forms can be used:

1. Design Records (Drawing Specifications...)
2. Approved IMDS declaration of material (done in IMDS database: http://www.mdsystem.com/index.jsp
3. Engineering Change Documents: "Supplier Request for Engineering Approval"
4. Autoliv Engineering Approval
5. Design Failure Mode and Effects Analysis (Design FMEA)
6. Process Flow Diagrams (no specific form required)
7. Process Failure Mode and Effects Analysis (Process FMEA)
8. Control Plan
9. Measurement System Analysis
10. Dimensional Results
11. Records of Material/Performance Test Results
12. Initial Process Studies (no specific form required)
13. Qualified Laboratory Documentation (no specific form required)
14. Appearance Approval Report
15. Sample Production Parts (no specific form required)
16. Master Sample (no specific form required)
16. Checking Aids
17. Records of compliance with Autoliv specific requirements
17.1. Submission of AS 244-labels samples (no specific form required)
17.2. AS 5-Waiver Request Form
18. Part Submission Warrant (PSW)

- Production Trial Run Checklist
- Production Trial Capacity Report
- Records of Material/Performance Test Results
- RFQ (Request for quotation)
- S-APQP
- Supplier Fact Profile
- Supplier Request for Engineering Approval
- Confidential Agreement or Confidential Agreement - Mutual Form

2. Autoliv Standards
- AS 2 (Process Audit)
- AS 4 (Product Traceability)
- AS 5 (Substance Use Restrictions), Appendix A - Restricted and Forbidden Substances list
- AS 31 (Environmental Policy)
- AS 51 (Supplier Rating), Appendix A (AS 51 Examples)
- AS 51 Training
- AS 51 Targets and Thresholds
- AS 51 Dispute form
- AS 51 Dispute form (pdf version if the excel version cannot be opened)
- AS 52 (Product Characteristics Classification), Appendix B (SC,CC)
- AS 61 (Presentation of Continual Improvement Processes), AS 61/App. form months; AS 61/App. form weeks
- AS 63 (8D Problem Solving Process)
- AS 69 (Special Processes-Requirements and Assessments)
- AS100 (Autoliv Product Development System - APDS) Autoliv internal Standard. This is a reference document in certain AS (e.g. AS 52) but not applicable for suppliers!
- AS 105 (Potential Failure Mode and Effects Analysis in Manufacturing and Assembly Processes)
- AS 242/1 (EDI Messages)
- AS 242/2 (EDI Messages)
- AS 242/3 (EDI Messages)
- AS 242/4 (EDI Messages)
- AS 244 (Package and Transport Label)
- AS 412 (Interim Inspection Plan)
- Autoliv IMDS Reporting Guideline
- Autoliv Spare Part Standard
- Autoliv Standards of Business Conducts and Ethics
- APS-Workshop-Guideline
- ASDP-Process-Flow
- ASDP-Review-Guideline
- Control Definition Standard
- Escalation Model
- Production Trial Run Standard
- Supplier Performance (AS 51) Improvement
- Supplier Pre-Qualification Process
- Supplier Pre-Qualification Questionnaire
3. Other Standards
- AIAG Manual / APQP (Advanced Product Quality Planning)
- AIAG Manual / PPAP (Production Part Approval Process)
- AIAG Manual / SPC (Statistical Process Control)
- AIAG Manual / MSA (Measurement System Analysis)
- AIAG Manual / QSA (Quality System Assessment)
- AIAG Manual / P-FMEA (Process Failure Mode and Effects Analysis)
- ISO 9001
- ISO/TS16949 Quality Systems
- ISO 14001
- IMDS Database (http://www.mdsystem.com/index.jsp)
- Legal (local, national and global) requirements referring to material restrictions

4. Excel Guideline
   General Excel Guideline

5. Local Documents
5.1 Doing Business with Autoliv companies located in North America
5.1.1 Commercial Terms and Conditions (NA)
   - 544 Standard Rev 1108
   - 545 Construction Rev 1203
   - 547 Electronic Data Rev 1203
   - 566 Personal Services Rev 1203
   - 570 Computer Software Rev 1203
   - 571 Sales Tax Clauses Rev 1203

5.1.2 Plant Specific Information (NA)
   - Import Requirements Mexico
   - Tool Asset Form

5.2 Doing Business with Autoliv companies located in Europe
5.2.1 Commercial Terms and Conditions (AEU)
   - Security Declaration for Authorised Economic Operators AEO
     Autoliv B.V. & Co. KG, Werk Nord (ANG)
   - EKG Autoliv BV und Co KG 01 07 2005
   - GPC Autoliv BV und Co KG 01 07 2005
   - General purchase conditions 01 07 2007

5.1.2 Plant Specific Information (AEU)

   Autoliv B.V. & Co. KG, Werk Nord (ANG)
Guideline Principal Parts Report July 2009

Autoliv France (AKF)
Environmental Policy
• Politique Environnementale - mars 2007_GB
• Politique Environnementale - mars 2007_FR
General Purchasing Conditions
• APP Conditions Generales d Achat
• APP General purchasing conditions
Labels
• Labels First delivery
• Labels Samples
• Labels PPAP
  Logistic - Crisis forms
• Logistic crisis document
• Maquette de crise
PPAP Process Management
• AKF Processus PPAP update
  Visual standard supplier backlog
• Visual standard supplier backlog delivery and incomplete palette management

Autoliv Cankor (ATR)
• ATR - Environmental Policy
• Packaging Manual and Guidelines
• Sorting and Rework cost in ATR

Autoliv Isodelta (ISO)
• ISO - Environmental Policy

LIVBAG (LIV)
ALI Europe Specifications
• LIV - ALI Europe Logistics Specifications
• LIV - Recommendations Against Corrosion - Ed 2003
  LIV-Logistic Protocol V03
• LIV - Logistic Protocol V03
  Proto spec for develop phase-Jan 08
• Prototype specification

5.3 Doing Business with Autoliv companies located in Autoliv Asia
5.3.1 Commercial Terms and Conditions (India)
• General Purchase Conditions (GPC) Autoliv India
• Amendment to GPC Autoliv India

Latest revision
2009-10-26 14:12:45 The Contract Review is updated. 2.11-2.13 in Plastic Visible parts are new fields.

Revision History
Please find below links to the following ASM training chapters:

- ASM-Purpose and Structure
- ASM-RFQ and Feasibility Training
- ASM-S-APQP and Contract Review Training
- ASM-Production Trial Run Training
- ASM-NCM-Report-Training
- AS 51 Training
- Glossary -

- AAR = Appearance Approval Report
- AEC = Automotive Electronics Council
- ASM-Document Structure:
  - **Purpose**
  - **Input from Autoliv**
  - **Requirements**
  - **Output from Supplier**
  - Result from an activity.
  - **Required Documents**
    - Documents/Templates to be prepared and submitted by Supplier.
  - **Reference Documents**
    - Standards/Manuals/Guidelines/Templates/Documents use is mandatory.
- AIAG = Automotive Industry Action Group (acc. to AIAG Manual)
  - The AIAG is a group formed by DaimlerChrysler, Ford Motor Company, and General Motors.
  - The purpose: To provide an open forum where members cooperate in developing and promoting solutions that enhance the prosperity of the automotive industry.
  - AIAG's focus is to continuously improve business processes and practices involving trading partners throughout the supply chain.
- APQP = Advanced Product Quality Planning (acc. to AIAG Manual / APQP)
  - Plan and process to support the product preparation prior to component qualification (PPAP). The purpose is to assist the Product Quality Planning Team in developing and defining appropriate quality measures to support product specific customer requirements, needs and expectations.
- APP = Autoliv Partner Portal
- APS = Autoliv Production System
- ASDP = Autoliv Supplier Development System
- ASM = Autoliv Supplier Manual
- BOM = Bill of Material
- Bulk Material
  - Is a substance (e.g. non-dimensional solid, liquid, gas) such as adhesives, sealants, chemicals, coating, fabrics, lubricants, etc. A bulk material may become production material if issued a customer production part number.
- CLD = Control Level Definition
♦ CC/SC
  CC = Critical Characteristic: Product/Process Characteristic affects a product safety, operator safety and/or compliance with regulatory (governmental and legal) requirements.
  SC = Significant Characteristic: Product/Process Characteristic affects a product form, fit or function (other than safety and regulatory requirements e.g. environmental, health and safety, customer or internal regulations) or has other valid reasons for control and documentation.

♦ Commodity Manager / Team

♦ CPK = Continuous Process Ko-Efficiency

♦ CSL = Controlled Shipping Level

♦ DAR = Dock Audit Report

♦ DMR = Defective Material Report

♦ DRD = Design Requirement Document

♦ Early production containment plan / AP12
  Extended control and inspection activities implemented during SOP and to contain quality issues if defined.

♦ EDI = Electronic Data Interchange

♦ ESA = Engineering Sample Approval

♦ FIT = Failure in time

♦ Flag Panel
  It is a internal Autoliv Purchasing Commodity form that presents our current supplier base and their actual status.

♦ IMDS = International Material Data System

♦ JIT = Just in Time

♦ LTAP = Long Term Action Plan

♦ MTTF = Mean time to failure

♦ NCM = Non Conforming Material

♦ PDCA = P (Plan) D (Do) C (Check) A (Act)

♦ PPAP = Production Part Approval Process (acc. to AIAG Manual / PPAP)
  It defines generic requirements for production part approval, incl. Production and bulk materials. / The purpose is to determine if all customer engineering design record and specification requirements are properly understood by the supplier and that the process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.
♦ **Pre-Launch Control Plan** (acc. to AIAG Manual / APQP)
Pre-Launch control plans are a description of the dimensional measurements and material and functional tests that will occur after prototype and before full production. The Pre-Launch control plan should include additional product / process controls to be implemented until the production process is validated. The purpose of the Pre-Launch control plan is to contain potential nonconformances during or prior to initial production runs.

♦ **PPK** = Preliminary Process Ko-Efficiency

♦ **PSW** = Part Submission Warrant

♦ **QCD** = Quality, Cost & Delivery

♦ **QOS** = Quality Operating System

♦ **Shall** = Must

♦ **SMED** = Single Minute Exchange Dye

♦ **SPC** = Statistical Process Control (acc. AIAG Manual / SPC)

♦ **SQA** = Supplier Quality Assurance

♦ **SQE** = Supplier Quality Engineering

♦ **TPM** = Total Productive Maintenance

♦ **VE/VA** = Value Engineering / Value Analysis
Local documents

Purpose:

Reference Documents:

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- 571 Sales Tax Clauses Rev 1203

1.1.2 Plant Specific Information (NA)

- Import Requirements Mexico
- Tool Asset Form

2.2 Doing Business with Autoliv companies located in Europe
2.2.1 Commercial Terms and Conditions (AEU)

- Security Declaration for Authorised Economic Operators AEO

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- EKG Autoliv BVundCo KG 01 07 2005
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- General purchase conditions 01 07 2007

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- Politique Environnementale - mars 2007_GB
- Politique Environnementale - mars 2007_FR
General Purchasing Conditions

- APP Conditions Generales d Achat
- APP General purchasing conditions

Labels

- Labels First delivery
- Labels Samples
- Labels PPAP

Logistic - Crisis forms

- Logistic crisis document
- Maquette de crise

PPAP Process Management

- AKF Processus PPAP update

Visual standard supplier backlog

- Visual standard supplier backlog delivery and incomplete palette management

Autoliv Cankor (ATR)

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- Packaging Manual and Guidelines
- Sorting and Rework cost in ATR

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Proto spec for develop phase-Jan 08

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Printed document information
Category: Reference Documents
Title: 
Version: 1
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