

QM – Neuerungen und Trends

PPAP Fourth Edition

Oktober 2007



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Teil 1: PPAP Fourth Edition – die wichtigsten Änderungen im Überblick

Oktober 2007



PPAP Fourth Edition – Änderungen im Überblick

- ◆ Angleichung der PPAP-Forderungen an die ISO/TS 16949
- ◆ Aktualisierung spezifischer PPAP-Forderungen
- ◆ Modifizierung der Kundenbenachrichtigungs- und Vorlageforderungen
- ◆ Überarbeitung des Anhangs „Bulk Material – Specific Requirements“
- ◆ Überarbeitung der PSW (Part Submission Warrant)
- ◆ Überarbeitung der Formularvorlagen (Dimensional-, Material Test-, Performance Test-Results; Anhänge C, D und E)
- ◆ Verlegung der kundenspezifischen Forderungen (= Section II in PPAP Third Edition) auf die entsprechenden Websites
- ◆ Überarbeitung des Anhangs „Tires – Specific Requirements“
- ◆ Überarbeitung der „Truck OEM-Specific Instructions“ und Verlegung der Forderungen in den Anhang H
- ◆ Überarbeitung des Glossars



ad. 3.1 Customer Notification (Kundenbenachrichtigung)

1/2

- ◆ **Der Kunde muss über alle geplanten Produkt- und Prozessänderungen informiert werden.**
- ◆ **Beispiele**
 - andere Konstruktionen / Materialien
 - neue oder modifizierte Werkzeuge (ausgenommen Verschleiß)
 - überholte oder umgebaute Werkzeuge
 - verlagerte Werkzeuge in/von andere/n Werke/n
 - andere Unterauftragnehmer (Teil, Material, Dienstleistung)
 - Werkzeuge, die länger als 12 Monate stillgelegt waren
 - geänderte Produkte und Prozesse
 - geänderte Prüfverfahren (neue Prüf- und Messmethoden)
 - **Zusätzlich für verfahrenstechnische Produkte**
 - ✓ neue Bezugsquellen für Rohmaterialien
 - ✓ Änderungen des Aussehens von Produkten



ad. 3.1 Customer Notification (Kundenbenachrichtigung)

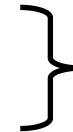
2/2

◆ Gegenüberstellung der Tabelle 3.1 „examples of changes requiring notification“

PPAP Third Edition	PPAP Fourth Edition
ad. Pkt. 5: Change of subcontractor for parts, non-equivalent materials, or services (e.g., heat-treating, plating) that affect customer fit, form, function, durability, or performance requirements.	ad. Pkt. 5: Change of supplier for parts, non-equivalent materials, or services (e.g., heat-treating, plating).
ad. Pkt. 7: Product and process changes related to components of the production product manufactured internally or manufactured by subcontractors that impact fit, form, function, performance, and/or durability of the salable concur with any requests by a subcontractor before submission to the customer.	ad. Pkt. 7: Product and process changes related to components of the production product manufactured internally or manufactured by suppliers.

....that affect customer fit, form, function

....that impact customer fit, form, function



wurde gestrichen!



ad. 3.3 Situations Where Customer Notification Is Not Required

Requirement	Clarification or examples
1. Changes to component level drawings, manufactured internally or manufactured by sub-contractors, that do not impact the design record for the product supplied to the customer.	Changes do not affect customer fit, form, function, durability or performance requirements.
2. Tool movement within the same plant (used in equivalent equipment, no change in process flow, no disassembly of the tool) or equipment movement within the same plant (same equipment, no change in process flow).	Based on lean manufacturing, some equipment is mobile, i.e. on wheels with casters. Equipment configurations or movement may be changed without changing process flow. No change made to control plan.
3. Changes in equipment (same basic technology)	Examples are new equipment, additional equipment, replacement, or change in equipment size.
4. Identical gages	Gages replaced as a part of a gage maintenance or calibration system.
5. Changes in operator job content with no change in process flow.	Lean manufacturing allows for rebalancing job content to eliminate bottleneck issues.
6. Changes resulting in reduced RPN on PFMEA (with no change to process flow).	Examples include added controls, increased sample size and frequency, and error-proofing installation.

Ist in der „Fourth Edition“ entfallen!



ad. 4.1 Retention / Submission Requirements

PPAP – Fourth Edition		PPAP – Third Edition	
1.	Design Record - for proprietary components/details - for all other components/details	1.	Design Record - for proprietary components/details - for all other components/details
2.	Engineering Change Documents, if any	2.	Engineering Change Documents, if any
3.	Customer Engineering approval, if required	3.	Customer Engineering approval, if required
4.	Design FMEA	4.	Design FMEA (see I.2.2.4)
5.	Process Flow Diagrams	5.	Process Flow Diagrams
6.	Process FMEA	6.	Process FMEA
7.	Control Plan	7.	Dimensional Results
8.	Measurement System Analysis Studies	8.	Material, Performance Test Results
9.	Dimensional Results	9.	Initial Prozes Studies
10.	Material, Performance Test Results	10.	Measurement System Analysis Studies
11.	Initial Prozes Studies	11.	Qualified Laboratory Documentation
12.	Qualified Laboratory Documentation	12.	Control Plan
13.	Appearance Approval Report (AAR), if applicable	13.	Part Submission Warrant (PSW)
14.	Sample Product	14.	Appearance Approval Report (AAR), if applicable
15.	Master Sample	15.	Bulk Material Requirements Checklist (for bulk material PPAP only)
16.	Checking Aids	16.	Sample Product
17.	Records of Compliance With Customer-Specific Requirements	17.	Master Sample (see I.2.2.17)
18.	Part Submission Warrant (PSW)	18.	Checking Aids
	Bulk Material Checklist (see 4.1)	19.	Records of Compliance With Customer-Specific Requirements



Vorlagestufen „Bulk Materials“ (Verfahrenstechnische Produkte)

PPAP	Level 1	Level 2	Level 3	Level 4	Level 5
Third Edition	R	R	R	*	R
Fourth Edition	S	S	S	S	R

S (submit)= muss dem Kunden vorgelegt werden, Kopie beim Lieferanten (in Produktionsnähe)

R (retain) = muss beim Lieferanten (in Produktionsnähe) aufbewahrt und dem Kunden auf Anforderung verfügbar gemacht werden

* = S / R gemäß Vereinbarung

◆ „S“ bezieht sich auf:

➤ PSW (Part Submission Warrant)

- ✓ Unter „reason for submission“ ist „other“ anzukreuzen und „Bulk Material“ als Erläuterung hinzuzufügen

➤ Bulk Materials Requirements Checklist



Kundenspezifische Forderungen

- ◆ Der Abschnitt „Kundenspezifische Forderungen“ wurde im „PPAP Fourth Edition“ aufgelöst!

PPAP Third Edition	PPAP Fourth Edition
DaimlerChrysler Corporation-Specific Instructions	Aktueller Status nur aus Internet
Ford-Specific Instructions	
General Motors-Specific Instructions	
Truck OEM-Specific Instructions	Anhang H



„Customer specifics“ zur PPAP Fourth Edition



The screenshot shows the IAOB website interface. At the top left is the IAOB logo. To its right, the text reads "INTERNATIONAL AUTOMOTIVE OVERSIGHT BUREAU" and "Americas Division". Below this, a dark red banner contains the date "September 25, 2007" and "Home" on the left, and the website URL "www.iaob.org" on the right. A vertical navigation menu on the left side lists various categories with right-pointing arrows. The main content area is titled "OEM Customer-Specific Requirements" and contains a bulleted list of links. A red rectangular box highlights the first three items in the list: "Chrysler", "Ford Motor Company", and "General Motors". Below the list, the text "Customer specifics for 'PPAP Fourth Edition'!" is displayed in large blue font, followed by "Date:" and three bullet points listing dates for Chrysler (October 2007), Ford Motor Company (March 2006), and General Motors (September 2007).

IAOB

INTERNATIONAL AUTOMOTIVE OVERSIGHT BUREAU
Americas Division

September 25, 2007 Home www.iaob.org

About IAOB

About IATF

IATF Communiqués

ISO/TS 16949:2002

OEM Customer-Specific Requirements

ISO/TS 16949:2002 Sanctioned Interpretations and FAQs

Rules 2nd Edition Sanctioned Interpretations and FAQs

Core Tools

OEM Communiqués

IATF Publications

IATF Training

IATF Certification Bodies

OEM Customer-Specific Requirements

- [Chrysler](#)
- [Ford Motor Company](#)
- [General Motors](#)
- [IAOB Clarification of the Impact of Customer Special Status Conditions](#)

Customer specifics for “PPAP Fourth Edition”!

Date:

- ◆Chrysler: Oktober 2007
- ◆Ford Motor Company: März 2006
- ◆General Motors: September 2007



2.2.1 Design Record (Designaufzeichnungen)

- ◆ **Anmerkung 2: Eine einzelne Designaufzeichnung kann mehrere Teile oder Assemblierungskonfigurationen gelten**
- ◆ **Anmerkung 3: Designaufzeichnungen für Black-Box-Teile spezifizieren die Schnittstellen und die Leistungsanforderungen**
- ◆ **Anmerkung 4: Designaufzeichnungen für Katalogteile können sich auf spezifizierte Funktionen oder einer Referenz zu einem anerkannten Industriestandard beschränken**
- ◆ **2.2.1.1 Die Organisation muss nachweisen, dass die vom Kunden geforderten Berichte über die Materialzusammensetzung vollständig sind und alle Kundenforderungen erfüllen**
- ◆ **2.2.1.2 Wo anwendbar sind Kunststoffteile gemäß den Normen ISO 11469 und/oder ISO 1629 zu kennzeichnen (abhängig von Gewicht und Material)**



2.2.4 Design FMEA / 2.2.8 MSA-Studies (Messsystemanalysen)

2.2.4 Design FMEA

- ◆ **Anmerkung 1: Einzelne Design-FMEAs können auf eine „Familie“ von gleichartigen Teilen oder Materialien angewendet werden**

2.2.8 MSA-Studies (Messsystemanalysen)

- ◆ **Anmerkung 1: Gage R&R-Annahmekriterien sind im MSA-Handbuch definiert**



2.2.11 Initial Process Studies (Kurzzeituntersuchungen)

2.2.11.1 General

- ◆ „..... Für Merkmale mit besonderer Bedeutung sind Kurzzeituntersuchungen durchzuführen.“
- ◆ **Note 1: Wo keine Merkmale mit besonderer Bedeutung definiert sind, behält sich der Kunde vor, Kurzzeituntersuchungen an anderen Merkmalen zu fordern**

2.2.11.2 Quality Indices

- ◆ **Kurzzeituntersuchungen, die mehr als einen Prozessfluss (z.B. parallele Fertigungslinien, Mehrfach-Werkzeuge) beinhalten, können zusätzliche statistische Methoden erforderlich machen.**

2.2.11.3 Acceptance Criteria For Initial Study

- ◆ **Die Erfüllung der Kurzzeitfähigkeitsanforderungen ist eine von mehreren Kundenforderungen die zu einer PPAP-Freigabe führen**

2.2.11.6 Actions To Be Taken When Acceptance Criteria Are Not Satisfied

- ◆ **Anmerkung 1: Die Methoden der 100%-Kontrolle unterliegen einem Review seitens des Kunden und bedürfen seiner Zustimmung**

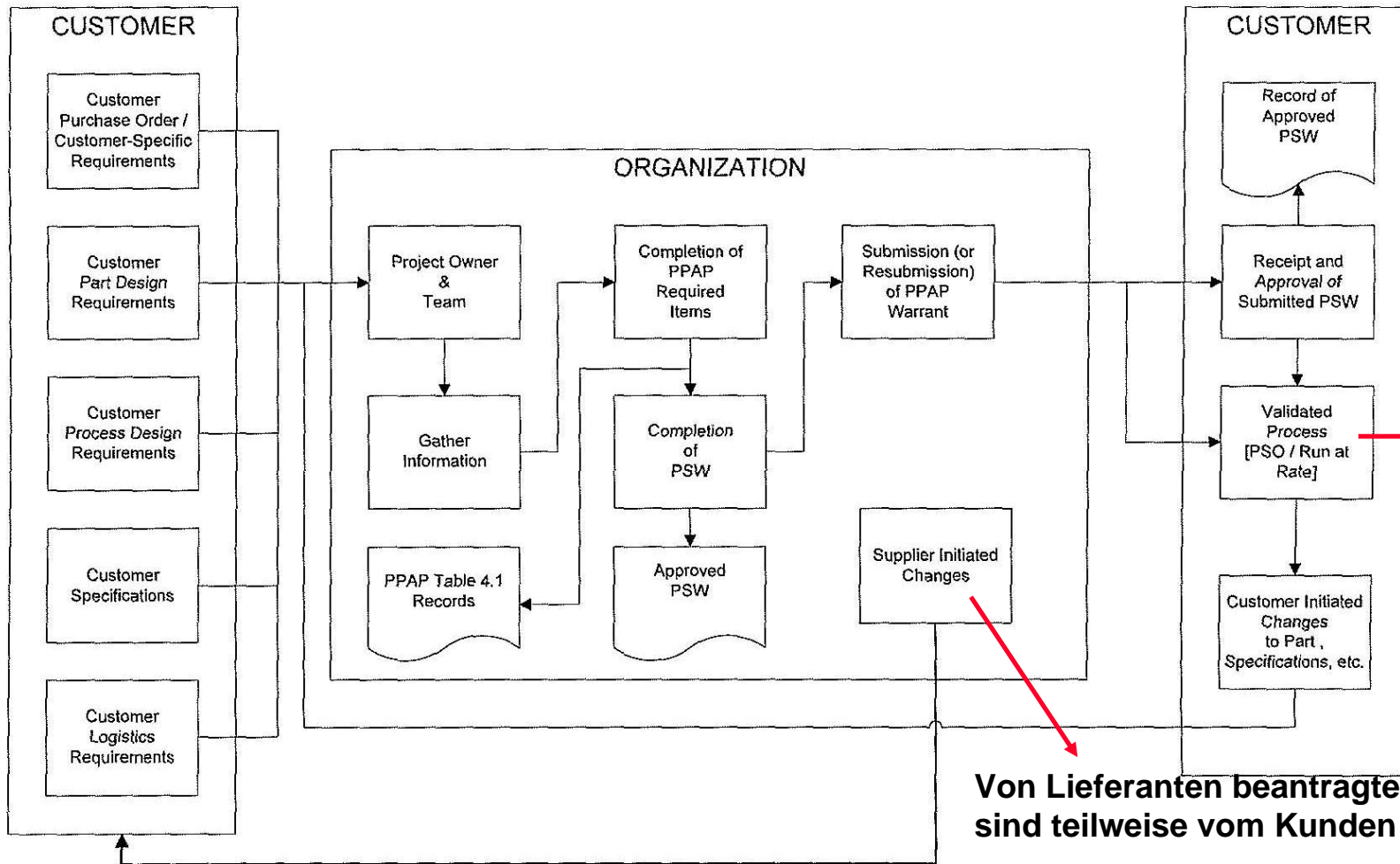


2.2.12 Qualified Laboratory Documentation (Dokumentation eines qualifizierten Laboratoriums)

- ◆ **Prüfungen und Tests für PPAP müssen durch ein gemäß den Kundenanforderungen (z.B. Akkreditierung) qualifiziertes Laboratorium durchgeführt werden.**
- ◆ **Das Laboratorium kann „intern“ oder „extern“ sein**
- ◆ **Arbeitsgebiet und Dokumentation müssen darlegen, dass das Laboratorium für die durchgeführten Messungen und Tests qualifiziert ist.**
- ◆ **Bei externen Laboratorien**
 - **Testresultate müssen im für das Labor üblichen Berichtsformat übermittelt werden (z.B. Geschäftspapier mit Briefkopf)**
 - **Laborname, Datum der Prüfungen/Tests und die verwendeten Prüf-/Teststandards müssen ausgewiesen sein**



PPAP Process Flowchart Example



**„PSO / run at rate“
werden von
Kunden teilweise
im Zusammen-
hang mit PPAP
gefordert!**

**Von Lieferanten beantragte Änderungen
sind teilweise vom Kunden freizugeben!**



QM – Neuerungen und Trends



**Teil 2: PPAP Fourth Edition –
Änderungen an den Formularen**

Oktober 2007



Part Submission Warrant

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DaimlerChrysler   **Part Submission Warrant**

Part Name	[Redacted]	Cust. Part Number	[Redacted]
Shown on Drawing No.	[Redacted]	Org. Part Number	[Redacted]
Engineering Change Level	[Redacted]	Dated	[Redacted]
Additional Engineering Changes	[Redacted]	Dated	[Redacted]
Safety and/or Government Regulation	<input type="checkbox"/> Yes <input type="checkbox"/> No	Purchase Order No.	[Redacted]
Checking Aid No.	[Redacted]	Weight (kg)	[Redacted]
Checking Aid Engineering Change Level	[Redacted]	Dated	[Redacted]

ORGANIZATION MANUFACTURING INFORMATION				CUSTOMER SUBMITTAL INFORMATION
[Redacted]				[Redacted]
Organization Name & Supplier/Vendor Code				Customer Name/Division
[Redacted]				[Redacted]
Street Address				Buyer/Buyer Code
[Redacted]				[Redacted]
City	Region	Postal Code	Country	Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? Yes No n/a

Submitted by IMDS or other customer format: [Redacted]

Are polymeric parts identified with appropriate ISO marking codes? Yes No n/a

REASON FOR SUBMISSION (Check at least one)

<input type="checkbox"/> Initial Submission	<input type="checkbox"/> Change to Optional Construction or Material
<input type="checkbox"/> Engineering Change(s)	<input type="checkbox"/> Supplier or Material Source Change
<input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional	<input type="checkbox"/> Change in Part Processing
<input type="checkbox"/> Correction of Discrepancy	<input type="checkbox"/> Parts Produced at Additional Location
<input type="checkbox"/> Tooling Inactive > than 1 year	<input type="checkbox"/> Other - please specify below



Part Submission Warrant

2/2

REQUESTED SUBMISSION LEVEL (Check one)

- Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
- Level 2 - Warrant with product samples and limited supporting data submitted to customer.
- Level 3 - Warrant with product samples and complete supporting data submitted to customer.
- Level 4 - Warrant and other requirements as defined by customer.
- Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.

SUBMISSION RESULTS

The results for dimensional measurements material and functional tests appearance criteria statistical process package

These results meet all drawing and specification requirements: Yes No (If "NO" - Explanation Required)

Mold / Cavity / Production Process

DECLARATION

I hereby affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of / hours.

I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from the declaration below.

EXPLANATION/COMMENTS:

Is each Customer Tool properly tagged and numbered? Yes No n/a

Organization Authorized Signature

Date

Print Name

Phone No.

Fax No.

Title

E-mail

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition:

Approved

Rejected

Other

Customer Signature

Date

Print Name

Customer Tracking Number (optional)


number of pieces
manufactured during the
significant production
run (e.g.: 300)

time taken for the
significant production
run (e.g.: 8)

March 2006 **CFG-1001**



Production Part Approval, Dimensional Results



Production Part Approval Dimensional Test Results

ORGANIZATION: SUPPLIER/VENDOR CODE: NAME OF INSPECTION FACILITY:					PART NUMBER: PART NAME: DESIGN RECORD CHANGE LEVEL: ENGINEERING CHANGE DOCUMENTS:						
ITEM	DIMENSION / SPECIFICATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)				OK	NOT OK	
										X	
										X	
										X	
										X	
										X	
										X	
										X	
										X	

Blanket statements of conformance are unacceptable for any test results.

MARCH 2006	CFG-1003	<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
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Bulk Materials Requirements Checklist

	Required / Target Date	Primary Responsibility		Comments/ Conditions	Approved by / date
		Customer	Organization		
Product Design and Development Verification					
Design Matrix					
Design FMEA					
Special Product Characteristics					
Design Records					
Prototype Control Plan					
Appearance Approval Report					
Master Sample					
Test Results					
Dimensional Results					
Checking Aids					
Engineering Approval					
Process Design and Development Verification					
Process Flow Diagrams					
Process FMEA					
Special Process Characteristics					
Pre-launch Control Plan					
Production Control Plan					
Measurement System Analysis					
Interim Approval					
Product and Process Validation					
Initial Process Studies					
Part Submission Warrant					
Elements to be completed as needed					
Customer Plant Connection					
Customer-Specific Requirements					
Change Documentation					
Supplier Considerations					
Plan Agreed to by: Name / Function		Company / Title / Date			

