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A to K	N/A	*To see history of changes please click **HERE**.*
L	George Zhou	Approvers: Add William Toh, JH Tan, Chris Hempsall as the document approvers. Section 2: Updated the PPAP scope. Section 3.1: Added the terminology of BTP and RACI. Section 4: Added the RACI chart and updated the responsibilities. Section 6.1: Updated the general guideline. Deleted original section 6.3 because of repetition. Section 6.4: Updated the PPAP elements. Section 7: Updated the PPAP record retain method.

1. Purpose

1.1 To define the Jabil Production Part Approval Process for purchased components.

1.1.1 To ensure that supplier can meet the manufacturability and quality requirements for purchased parts / materials.

2. Scope

2.1 Suppliers may be requested to submit a Jabil Production Part Approval Process based on the following, but not limited to:

- Jabil Customer Requirements
- Jabil Site / Business needs
- Jabil Design needs

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

2.2 This procedure applies to EMS segment and DMS segment. Exclude: Healthcare division, JGP Tooling / Automation / Design sites.

2.3 This procedure applies to the direct parts / components that will be part of the product deliver to customer).

2.4 This procedure applies to the parts / components which are produced under categories of Build to Print. Build to Print means parts / components are produced according to the drawing which supplied by Jabil or customer. Not limited to these examples of parts / components Build to Print refer to the appendix A.

2.5 Below scenarios could be exempted:

- The parts / materials provided by customer unless customer requires Jabil to do the part qualification.
- The parts / materials purchased from customer directed supplier unless customer requires Jabil to do the part qualification.

2.6 If parts / commodities require PPAP based on the scope defined above but site decide to exempt it, a deviation or waiver must be applied and approved.

2.7 The E-JPPAP process is required to follow for purchased parts / materials qualification, except below scenarios:

- For custom mechanical parts / materials qualification in A&T sector, they will follow the process in PPAP Manager system with A&T sector specific requirements.
- Customer request to follow some other specific part qualification process.

3. Definitions/Terminology

3.1 **JPPAP -** Jabil Production Part Approval Process – A documentation package that is submitted to provide the evidence needed to show that all customer engineering design record and specification requirements are properly understood by the organization and that the designed process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.

3.1.1 **Other Terms and definitions**

E-JPPAP - Electronic Jabil Production Part Approval Process.

CAPA – (Corrective And Preventive Action) – Method for the investigation and resolution of quality concerns.

NPI – New Product Introduction.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

Part Submission Warrant (PSW) -- is an industry standard document required for all newly tooled or revised products which the organization confirms that inspections and test on production parts show conformance to customer requirements.

DFMEA - Design Failure Mode and Effects Analysis

PFMEA – Process Failure Mode and Effects Analysis

AAR- Appearance Approval Report

Dimensional Results – Evidence of dimensional verification required by the design record and the Control Plan.

DE – Design Engineer

SQE – Supplier Quality Engineer

Jabil Representative -- The responsible people from Jabil who request and follow up supplier to submit the PPAP documentation and samples, and/or approve the PPAP. It was assigned by Jabil site.

Design Record -- is the part drawing, specifications, and/or electronic (CAD) data used to convey information necessary to produce a product.

Process Flow Diagram -- is a schematic representation of the process flow.

Control Plan – A document through which a supplier succinctly defines the various means employed to control it's critical and non-critical manufacturing processes as spelled out in its process flow diagram. The Process Control Plan should follow the guidelines identified in the referenced JPPAP template document or an approved equivalent.

Pp-Ppk Studies – A mathematical method of proving that predefined critical manufacturing processes and component features are being maintained by the supplier to Jabil and Customer expectation.

G R&R – Gauge Repeatability and Reproducibility, this is a mathematical method, based on ANOVA Method, used to determine if a gauging system, employed by a supplier, to measure critical dimensions or features, is robust enough to produce repeatable and reproducible data.

CC´s - Critical Characteristics shall be called out in the drawing by Customer and/or design owner. Otherwise, Customer, Jabil and Supplier need to define if Ppk values require to be calculated for some special characteristics based in Form, Fit and Function and its affectation to the performance of the part.

Run at Rate - A term used in the final qualification process which defines the approximate speed or production rate from which a process will be qualified, e.g., have samples taken for inspection purposes, Pp - Ppk studies run.

RFQ – Request For Quotation.

RoHS - Restriction of Hazardous Substances.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

IMDS - (International Material Data System) - Also known as Substances Of Concern reporting. When it is required by customer that Jabil provide IMDS for the product delivered, suppliers may submit the required reporting data through the IMDS system. The submission I.D. number may be entered on JPPAP\PSW form. The Jabil IMDS corporate Identification number may be required for submissions, or the customer corporate identification number, depending on agreed method with the customer.

RBA – Responsible Business Alliance

MSDS - Material Safety Data Sheets

Feasibility Report - A feasibility study/report is an evaluation of a proposal designed to determine the difficulty in carrying out a designated task. For a JPPAP process, a feasibility study/report precedes technical development and project implementation. In other words, a feasibility study/report is an evaluation or analysis of the potential impact of a proposed project and it shall be submitted prior to JPPAP submission.

BTP - Build to Print means parts / components are produced according to the drawing which is supplied by Jabil or customer.

RACI – R=Responsible, A=Accountable, C=Consulted, I=Informed.
Responsible: Those who do the work to achieve the task.
Accountable: The role that is answerable for the correct and thorough completion of the deliverable or task

A&T – Automotive and Transportation.

3.2 JPPAP SUBMISSION LEVELS

- Level 1: Part Submission Warrant (PSW) only, and for designated appearance items, an Appearance Approval Report required.
- Level 2: PSW with product samples and limited supporting data.
- Level 3: PSW with product samples and complete supporting data.
- Level 4: PSW and other items requested.
- Level 5: PSW with product samples and complete supporting data available for review at the manufacturer.

Notes: Detailed submission requirements for each level refer to section 6.

3.3 **APPROVAL STATUS:** disposition status will be communicated to the supplier by electric notification sending by E-JPPAP system. If E-JPPAP system isn't used based on customer request, a signed PSW shall be sent to supplier.

3.3.1 **APPROVED**;

It indicates that the part, including all sub-components, meets all Jabil requirements. The supplier is therefore authorized to ship production quantities of the product, subject to releases from the Jabil scheduling activity.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

3.3.2 **REJECTED**;

It means that the submission, the production lot from which it was taken, and/or accompanying documentation do not meet Jabil requirements. Corrected product and/or documentation must be resubmitted and approved before qualification can be given.

NOTES: In case any urgent request for production build, site deviation authorization procedure can be used with condition: (1) root cause of the non-conformities is identified and (2) a completed interim action plan is submitted and agreed to by FINAL CUSTOMER/Jabil. Resubmission to obtain Approval status is required.

4. RESPONSIBILITIES

4.1 RACI of the PPAP process

	Tasks / Function	Requester	Owner	Team Member	BU	Supplier
1	Create PPAP request	R				
2	Assign the owner	R				
3	Assign the team member		R			
4	Define PPAP level and requirements		R	R		
5	Supplier communication	A	R	R		
6	Upload PPAP documents		A	A		R
7	Review PPAP		R	R		
8	PPAP approval	I	R	R		
9	Get customer approval, if needed		A		R	
10	Upload customer approval evidence, if needed		R			
11	Sign PSW and upload to system		R			

4.2 PPAP Requestor

- Create the PPAP request for a specific Manufacturing Part Number.
- Enter supplier contact information.
- Define the Jabil JPPAP owner.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

Notes: Requester can be buyer / SCDM / SCPM / SQE / SDE, etc.

4.3 PPAP Owner

- Define the team member(s) in Jabil who should support to review the PPAP.
- Define the PPAP submission level and elements required. Refer to section 6.4.
- Choose submission reason.
- Confirm supplier's contact window information.
- Establish the completion date that is required from the supplier.
- Review the PPAP general information and documentation that are submitted by the supplier.
- Sample product review and 3F (Form, Fit and Function) test implementation, if needed.
- Upload the PPAP customer approval evidence to E-JPPAP system, if needed.
- Sign the PSW and upload it to E-JPPAP system.
- Teach supplier on how to submit the PPAP in E-JPPAP system and trouble-shoot the problems that supplier meets in using the system.

Notes: Owner can be SQE of the site that will receive the parts / components or team assigned by management (example: SDE in A&T for custom mechanical parts).

4.4 PPAP Team Member

- Review the PPAP general information and documentation that are submitted by the supplier.
- Sample product review and 3F (Form, Fit and Function) test implementation, if needed.

Notes: Team members may include ME/QE/SDE/SCPM/SCDM/Design (if designed by Jabil), etc.

4.5 Business Unit (BU)

If customer requires that the PPAP submitted from supplier must be approved by customer.

- Submit the PPAP documents and samples to customer for approval and get the customer approval evidence.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

4.6 **Jabil Purchasing Representative**

- Direct the supplier to Jabil Representative for JPPAP document submission.
- Push supplier to follow divisional requirement for JPPAP submission timeline.
- Act as waiver or deviation initiator when waiver or deviation is needed.

4.7 **Escalation Route.**

When there is lack of response or cooperation from supplier, PPAP owner should escalate to purchasing representative. If the issue persists with no improvement, escalate to GCM(Global Commodity Manager) / DCM(Division Commodity Manager).

4.8 **Segmental / Divisional Supplier Quality Leader**

Global supplier quality / Segmental / divisional supplier quality leaders /SCPM leaders are responsible to drive site to follow the global JPPAP procedure.

4.9 **Top Management of each Site (Ops Mgr / Purchasing Mgr / Quality Mgr)**

Top Management of each site is responsible to develop, train and implement the JPPAP activities with the Jabil supply base at their own site. (SQE's, Quality, Engineering, Purchasing, other teams).

4.10 **References**

When critical characteristics (CC's) are not mentioned on the drawing, then Customer/Jabil/Supplier will need to review the drawing and agree to identify them based on Form, Fit and Function and the performance of said part or assembly that is expected in the field.

CC´s identification, inspection method(s) and cosmetic acceptance criteria shall be agreed during design review and JPPAP process **prior** to start of first production run.

All relevant data, dimensional studies and Ppk values will be reported in the JPPAP and submitted to Jabil for review and approval.

4.11 **Records**

JPPAP Submission Package

The supplier shall maintain records of all documents identified in Section 6 (as indicated in Figure 2) for each part produced for use in Jabil product.

In Jabil, the PPAP record will be held in E-JPPAP system. It could be searched by Manufacturing Part Number. If E-JPPAP is not available, individual PPAP files to be held by the appropriate parties, e.g., Design Engineering, applicable Work Cell Quality Engineer or Supplier Quality Engineer working with the work cell. Record

retention is based on each Jabil site's own requirements based on site management or customer direction.

5. Documents

5.1 Jabil Supplier Manual: RO-RG60-00006

5.2 Component Supplier Requirements: Contracts and T&C's (T&C's shall be reviewed on a case by case basis depending on customer, Jabil Site, or workcell requirements)

5.3 JPPAP Templates: RO-RG80-00031

5.4 Jabil Workmanship Standard for System Integration: 00-QS60-1000-003

6. Process

6.1 **General Guidelines**

6.1.1 PPAP can be kicked off when the part / component's design is locked down.

6.1.2 PPAP submission may be requested for, but not necessarily limited to, one or more of the following, based on customer, Jabil site or design requirements:

- Initial Submission
- Engineering Changes to design records
- Tooling Transfer, Replacement, Refurbishment
- Correction of Discrepancy
- Change to Optional Construction or Material
- Sub-supplier or Material Source Change
- Change in Part Processing
- Tooling Inactive > than 1 year
- Parts Produced at Additional Location
- Other situations required by Jabil Representative

6.1.3 Approval is obtained through submission to Jabil, and Jabil Representative acceptance of the requested documentation and samples. PPAP must be completed / approved before the first production PO (purchasing order) be placed for mass production to supplier. If production PO need to be issued before PPAP be approved, a site / workcell level waiver or deviation must be completed.

6.1.4 Customer approval, if required.

- PPAP owner and team members are responsible to review the PPAP documents and samples before submitting it to customer.
- BU is responsible to submit the PPAP documents and samples to customer for approval and get the customer approval evidence.

Notes: 1). If customer requires that the PPAP submitted from supplier must be approved by customer, we should follow it. Customer needs to sign on the PSW.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

Jabil PPAP owner needs to upload the customer approval evidence into the E-JPPAP system.

2). If customer don't have specific request to review the PPAP submitted from supplier, the approval from Jabil PPAP team is enough.

3). For Jabil design projects, PPAP activities defined by Jabil do not require customer approvals unless contractually agreed with the customer.

6.2 Level Assignment

6.2.1 Jabil default PPAP is level 3, but still Jabil PPAP owner can change the level assignment, based on customer requirement, part complexity, component risk evaluation, change level of part/process, tool, etc.

6.2.2 A request for submission at any level or any combination of elements in a level does not relieve the supplier of the responsibility of performing and keeping current all required elements.

6.3 Elements of Each Submission Levels

6.3.1 Figure 1 and Figure 2 identifies specific PPAP submission contents for each submission level. This forms the minimum level of elements that must be included in a PPAP submission. Additional elements may be requested / required and will be communicated at the time of notification of a request for submission.

6.3.2 FIGURE 1

Figure 1:

Level 1 – Part Submission Warrant (PSW) only. For designated appearance items, an Appearance Approval Report (AAR), if applicable shall be submitted.

Level 2 – PSW with product samples and limited supporting data.

Level 3 – PSW with product samples and complete supporting data. (See figure 2 for most common Level 3 elements. Actual required elements to be determined by Jabil quality representative.)

Level 4 – PSW and other requirements as defined by Jabil.

Level 5 – PSW with product samples and complete supporting data for review at supplier's location.

Notes: Actual required elements to be determined by Jabil representative. Jabil representative can add other additional requirements if needed but can't remove the default elements defined by chosen level where the requirement is applicable.

6.3.3 FIGURE 2

Figure 2: (Common elements of a JPPAP Submission)

SUBMISSION LEVEL						
Requirement		Level 1	Level 2	Level 3	Level 4	Level 5
1.	Design Record	R	S	S	*	R
2.	Authorized Engineering Change Documents, if any	R	S	S	*	R
3.	Customer Engineering Approval, if required	R	R	S	*	R
4.	Design FMEA	R	R	S	*	R
5.	Process Flow Diagrams	R	R	S	*	R
6.	Process FMEA	R	R	S	*	R
7.	Process Control Plan	R	R	S	*	R
8.	Gage Repeatability and Reproducibility Report	R	R	S	*	R
9.	Dimensional Results	R	S	S	*	R
10.	Material, Performance Test Results	R	S	S	*	R
11.	Initial Process Studies – Ppk	R	R	S	*	R
12.	Qualified Laboratory Documentation	R	S	S	*	R
13.	Appearance Approval Report (AAR), if applicable	S	S	S	*	R
14.	Sample Product	R	S	S	*	R
15.	Master Sample	R	R	R	*	R
16.	Checking Aids-Gauge List	R	R	R	*	R
17.	Record of Compliance with Jabil - Specific Requirements, if any	R	R	S	*	R
18.	Part Submission Warrant (PSW)	S	S	S	S	R

S = The supplier shall **submit** designated product approval activity and retain a copy of records or documentation items at appropriate locations including manufacturing.

R = Supplier shall **retain** at appropriate locations, including manufacturing, and make readily available to Jabil representative upon request.

* = If required or applicable.

6.4 ELEMENTS

Supplier shall meet all applicable PPAP elements listed in Section 6.4.1 through 6.4.18. For elements which supplier internal review / approval is required (as defined in Part Submission Warrant (PSW)), ownership for review / approval must be finished by supplier assigned representative before submission. Jabil ownership for approval is assigned by each Jabil site.

Notes:

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

1). Elements from 6.4.1 through 6.4.18 may not necessarily apply to every part number from every supplier, e.g., Design FMEA requirement only applies to the suppliers who have design responsibility/authority; Appearance Approval Report only applies to cosmetic items, etc. Refer to the detail of the elements' requirement in Figure 2 above for more information.

2). If customer requests to use their specific PPAP template for submission, customer requirements will take precedence. Otherwise use Jabil JPPAP template or equivalent supplier template that agreed by Jabil representative.

6.4.1 Design Record

Supplier shall have the design record for the saleable product/part, including design record for components or details of the saleable product/part. Where the design record is in electronic format, e.g., CAD/CAM math data, supplier shall produce a hard copy (e.g., pictorial, GD&T sheets, drawing) to identify measurements taken.

Typical design record include: 2D drawing, functional specification, etc.

Notes: 1). For any saleable product, part or component, there will be only one design record, regardless of who has design-responsibility. The design record may reference other documents making them part of the design record.

2). A single design record can represent multiple part or assembly configurations, e.g., a sub-frame assembly with various hole configurations for different applications.

3). For parts identified as catalog parts, the design record may consist only of a functional specification or a reference to a recognized industry standard.

4). For customer designed parts, if customer doesn't allow to show the design record in PPAP for security reason, a documented waiver should be included.

6.4.2 Authorized Engineering Change Documents.

Supplier shall have any authorized engineering change documents for those changes not yet recorded in the design record but incorporated in the product, part or tooling.

Notes: 1). The Engineering Change(s) must be approved by Customer/Jabil.

2). It only applies to the Engineering Change(s) which *have not been recorded in the design record.*

3). This will utilize the supplier specific format.

6.4.3 Customer Engineering Approval

Where specified by Customer/Jabil, the supplier shall have evidence of Customer/Jabil engineering Approval. e.g., a). Supplier has design responsibility, and customer requires the design records, the supplier must get customer engineering approval before release. b). For supplier raised ECN(s), the ECN(s) must get customer engineering approval before incorporation into product, part, or tooling. etc.

Notes: 1). This only applies to where designated by customer as required.

2). This will utilize the supplier specific format.

6.4.4 Design FMEA

The product design-responsible supplier shall develop a Design FMEA in accordance with, and compliant to, customer requirements.

Notes: 1). This only applies to the suppliers who have design responsibility / authority.

2). This will utilize the Jabil template or equivalent format.

3). In E-JPPAP system, when defining the submission requirements, Jabil PPAP owner shall select this requirement manually.

6.4.5 Process Flow Diagram(s)

Supplier shall have a process flow diagram that clearly describe the production process steps and sequence. This process flow once submitted and accepted cannot be altered without Jabil approval and resubmission of JPPAP

Notes: 1). This will utilize the supplier specific format.

2). Process flow diagrams for "families" of similar products are acceptable if the new parts have reviewed for commonalities by supplier.

6.4.6 Process FMEA

A Process FMEA shall be executed and shall be the basis for stipulated process controls stated on the "Control Plan". Actions shall be taken by suppliers for RPN >= 100 (Risk Priority Number), to reduce the RPN to lower than 100, and these actions shall also be reflected in the Control Plan.

Notes: 1). This will utilize the Jabil template or equivalent format.

2). A single Process FMEA may be applied to a process manufacturing a family of similar parts or materials if reviewed for commonalities by supplier.

6.4.7 Control Plan

Supplier shall have a Control Plan that defines all methods used for process control and complies with customer-specified requirements.

Notes: 1). This will utilize the Jabil template or equivalent format.

2). Control Plans for "families" of parts are acceptable if the new parts have been reviewed for commonalities by supplier.

6.4.8 Gage Repeatability and Reproducibility Report

To be executed on all critical process control features (to control identified product critical characteristics) identified on engineering documentation, including continued use

of data for process characterization. The recommended level of study is 3 operators * 3 trials. The minimum level of study shall include 2 operators x 2 trials. See JPPAP Templates for additional information.

6.4.8.1 Gage R&R System Acceptability

- % R&R<10% - *Gage* System is acceptable.
- 10%<% R&R<30% - Gage system is marginally acceptable. Base on customer requirement or control it not to be used for critical characteristics.
- % R&R>30% - *Gage* system needs improvement or not acceptable.

NOTE: 1). These are general values. An individual site may establish their own criteria.

2). This will utilize the Jabil template or equivalent format.

6.4.9 Dimensional Results

Suppliers shall submit a minimum of three (3) samples of each part or assembly, from each production line, tool and/or cavity, for approval prior to producing production units. Samples shall be taken from normal settings or parameters established by the supplier to be used during normal production. The submission shall include components and sub-assemblies supplied by supplier's own suppliers and/or sub-contractors and shall be produced by means following the referenced production Process Flow Diagram and Control Plan from the JPPAP.

Each sample must be numbered and supplied with data taken on each dimension (from each sample) identified on the print. In the case of multi-cavity tooling, samples must be segregated and measurements recorded individually by cavity.

If the values identified in the Dimensional report do not meet the requirements as defined on the piece part print, the Supplier must notify Jabil Representative via the "Parts Submission Warrant" block titled: "Submission Results."

If the parts fail to meet any JPPAP requirements, a waiver / deviation with cause analysis and corrective action must be applied and approved.

Supplier shall identify one of the parts measured as the master sample.

Notes:

1). Supplier shall measure all dimensions (except reference dimensions), characteristics, and specifications as noted on the design record and control plan in three (3) samples per production line, cavity/tool.

2). Supplier shall report in the Dimensional Results template their compliance with all drawing notes.

3). Actual sample size should follow customer or Jabil sites requirement.

4). This will utilize the Jabil template or equivalent format.

6.4.10 Material, Performance Test Results

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

Supplier shall have records of material and/or performance test results for tests specified on the design record or Control Plan, in supplier-specified format.

6.4.10.1 Material Test Results

Supplier shall perform tests for all parts and product materials when chemical, physical or metallurgical requirements are specified by the design record or Control Plan.

Material test results shall indicate and include:

- the design record change level of the parts tested;
- any authorized engineering change documents that have not yet been incorporated in the design record;
- the number, date, and change level of the specifications to which the part was tested;
- the date on which the testing took place;
- the quantity tested;
- the actual results;
- the material supplier's name.

6.4.10.2 Performance Test Results

Supplier shall perform tests for all parts or product materials when performance or functional requirements are specified by the design record or Control Plan.

Performance test results shall indicate and include:

- the design record change level of the parts tested;
- any authorized engineering change documents that have not yet been incorporated in the design record;
- the number, date, and change level of the specifications to which the part was tested;
- the date on which the testing took place;
- the quantity tested;
- the actual results;

Notes:

1). Lot # of material that manufacturer provided the material certification must be the same as the physical lot used for PPAP parts.

2). The material that supplier used for material certification, test report and Safety Datasheet must be the actual material that stated in PPAP, although drawing may allow alternative material(s).

3). Include details outlining every test, e.g., when it was performed, how it was performed and the result, if design record requires specific testing, such as hardness, coating adhesion, etc.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

4). This will utilize the supplier specific format.

6.4.11 Initial Process Studies - Ppk

The critical process control and/or significant dimensions (characteristics) for the capability studies are identified and/or agreed between supplier and a Jabil/Customer representative on the engineering documentation such as drawings, specifications, specific requirements and others. The study shall be done on a minimum sample of 30 random pieces taken from a minimum population of 300 and should be submitted using the form in the JPPAP Template document or Jabil approved equivalent. In the case of multi-cavity tooling, samples submitted, Dimensional Result(s), and capability studies are to be ran and measurements identified as per each cavity or tool. If expected production or quantities of parts ordered do not lend themselves to the 300 pieces minimum sample population, then written authorization is required from Jabil Representative.

Cpk – The capability index for a stable process. The estimate sigma is based on *within subgroup variation* (R-bar/d2 or S-bar/c4). Cpk is an indicator of process capability based on process within each subgroup of a set of data. Cpk does not include the effort of process variability between subgroups. Cpk is an indicator of how good a process could be if all process variation was to be eliminated. Therefore, use of Cpk alone may be an incomplete indicator of process performance.

Ppk – The performance index. The estimate of sigma is based on total variation (all of individual data using the standard variation [root mean square equation], "s"). Ppk is an indicator of process performance based on process variation throughout the full set of data. Unlike Cpk, Ppk is not limited to the variation within subgroups.

Based on this, Jabil selects Ppk as the default initial process study indicator.

Jabil Ppk level requirement is: Ppk >/= 1.67 for A&T and Ppk >/= 1.33 for others. Division or site may set a different Ppk level requirement based on final customer requirements or internal PD requirements. If the statistical data on the capability study does not meet Jabil specified goals, supplier must notify Jabil Representative via the "Parts Submission Warrant". Additionally, supplier shall provide an explanation as to why the finished units do not meet the requirements with proposed solutions, which could include containment efforts (e.g., 100% sorting /screening) to enable the process to be classified as capable.

If the Customer requires, the results of Form, Fit & Function tests performed by supplier might drive drawing and/or tolerance adjustments to meet Ppk requirements. After dimensional adjustments, supplier is responsible to meet and maintain their process capability within specified ranges and re-submit JPPAP.

Notes: This will utilize the Jabil template or equivalent format.

6.4.12 Qualified Laboratory Documentation

Inspection and testing for PPAP shall be performed by a qualified laboratory as defined by customer (e.g., an accredited laboratory). The qualified laboratory shall have a laboratory scope and documentation showing that the laboratory is qualified for the type of measurements or tests conducted.

Documentation Category	Mandatory
Document Scope	EMS, DMS except Healthcare division and JGP tooling / automation / design sites
Site Category	Manufacturing, Design Engineering

When an external/commercial laboratory is used, supplier shall submit the test results on the laboratory letterhead or the normal laboratory report format. The name of laboratory that performed the tests, the date of the tests, and the standards used to run the tests shall be identified.

Notes: This will utilize the supplier specific format.

6.4.13 Appearance Approval Report

For all submissions dealing with part cosmetics, samples should accompany or follow the warrant and PPAP data. Samples should be submitted to Jabil Design Engineering or Site SQE or other designated appropriate Jabil personnel for approval for initial product launches (NPI). Signed copies of the approval document(s) along with the sample(s) signed by Jabil Design Engineering / SQE, for which the document represents, shall be maintained on file at each of the supplier's sites which manufacture the part. Note: Samples are returned to the supplier for reference. Jabil site shall decide on any sample retention at site and its duration based on any customer or sector requirements, as applicable. Note: Sample size in such cases should not be less than 2

For guidance on the application of cosmetic standards, Jabil customer standards have priority. If no customer standards exist, reference Jabil Workmanship Standards For Systems Integration,00-QS60-1000-003.

Notes: This will utilize the Jabil template.

6.4.14 Sample Product

Supplier shall provide sample products as specified by Jabil. Refer to 6.4.9 and 6.4.13, and/or other sample products required by Jabil Representative.

6.4.15 Master Sample

Supplier shall retain a master sample for the same period as the production part approval records, or a) until a new master sample is produced for the same customer part number for customer approval, or b) where a master sample is required by the design record, Control Plan or inspection criteria, as reference standard. The master sample shall be identified as such, and shall show the customer approval date on the sample. Supplier shall retain a master sample for each position of a multiple cavity die, mold, tool, or pattern, or production process, unless otherwise specified by Jabil.

6.4.16 Checking Aids - Gauge List

Supplier shall retain a master gauge list (or submit if required by Jabil), which include all checking aid gauges used for part inspection, measuring and test. Supplier shall certify that all aspects of the checking aid agree with part dimensional requirements. And supplier shall document all released engineering design changes that have incorporated in the checking aid at the time of submission. GR&R shall be conducted in compliance with requirements defined in 6.4.8

Notes: This will utilize the supplier specific format.

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6.4.17 Jabil-Specific Requirements

Supplier shall submit all applicable Jabil-specific requirements which required by Jabil Representative.

Jabil Specific Requirements may include, but not limited to:

Section A - compulsory items when Jabil-Specific Requirements is required.

- Feasibility Report.
- Training Matrix
- Shipping Label
- Packaging Design.

Section B - optional items that PPAP team can select manually.

- RoHS report.
- UL report.
- MSDS.
- Form, fit, function test report.
- Yield report.
- MTD
- Attribute GR&R.
- Other requirements defined by Jabil representative.

6.4.17.1 Feasibility Report

Supplier should set up a team to review can the manufacturing process meet all the design record requirements (GD&T, performance specification, etc.) and can the initial process study index meet Jabil/customer requirement.

6.4.17.2 Training Matrix

The training matrix form demonstrate the training / skill status for the personnel related with manufacturing process described in the quality documentation (Process Flow, Control Plan, etc.).

6.4.17.3 Shipping Label

In the shipping label form, supplier provides the outer shipping label, inner box shipping label and the barcode examples in the shipping label tab for Jabil representative review. The label should follow the requirements defined in the Jabil Supplier Manual.

6.4.17.4 Packaging Design

In the packaging form, supplier provides the packaging design documentation for Jabil review. It will include the packaging design details, such as contain material, # of layers, partitions, part orientation, etc.

6.4.17.5 RoHS (Restriction of Hazardous Substances)

Document to prove the materials/parts/products are compliance to RoHS regulation.

6.4.17.6 UL (Underwriters Laboratories) report

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A report from the safety organization to show electrical parts/products meet standard usage safety for consumers.

6.4.17.7 MSDS (Material Safety Data Sheet)

Document that contains information on the potential hazards (health, fire, chemical reaction and environmental) and how to work safely with the chemical product.

6.4.17.8 Form, Fit, Function test report

Test report to show parts / products meet identified characteristics without any form fit issue.

6.4.17.9 Yield

Yield report provided by supplier to show it meets the target yield in quotation to ensure no capacity constraint due to low yield.

6.4.17.10 MTD

Document illustrating measurement method, measurement equipment, holding fixture, datum, etc. for critical dimensions indicated in component/assembly 2D print/specification.

6.4.17.11 Attribute GR&R

The attribute GR&R form is used to evaluate can inspector make good evaluation to the selected samples (accept conforming or reject non-conforming sample) and the repeatability and reproducibility of the evaluation. It can be typically used for the scenarios:

- Cosmetic evaluation.
- Go/No go gauge evaluation.

Notes: In E-JPPAP system, when Jabil Specific Requirement required, Jabil PPAP owner shall select this requirement manually, and describe what specific requirements are required.

6.4.18 Part Submission Warrant (PSW)

Upon completion of all PPAP requirements, supplier shall complete the Part Submission Warrant(PSW). A separate PSW shall be completed for each Jabil part number unless agreed to by the authorized Jabil Representative. Supplier shall verify that all of the measurement and test results show conformance with Jabil requirements, otherwise, supplier must notify the Jabil Representative via the "Parts Submission Warrant" block titled: "Submission Results." And a responsible official of the supplier shall approve the PSW and provide contact information.

Notes: This will utilize the Jabil template, unless customer has special requirements.

7. Required Outputs

7.1 The required outputs include the PPAP request, submission, review and approval records.

7.2 When the E-JPPAP process is followed, all the PPAP request, submission, review and approval (include customer approval, if needed) records will be maintained in the E-JPPAP system.

7.3 When other PPAP process is followed, the PPAP records must be retained by the site PPAP team.

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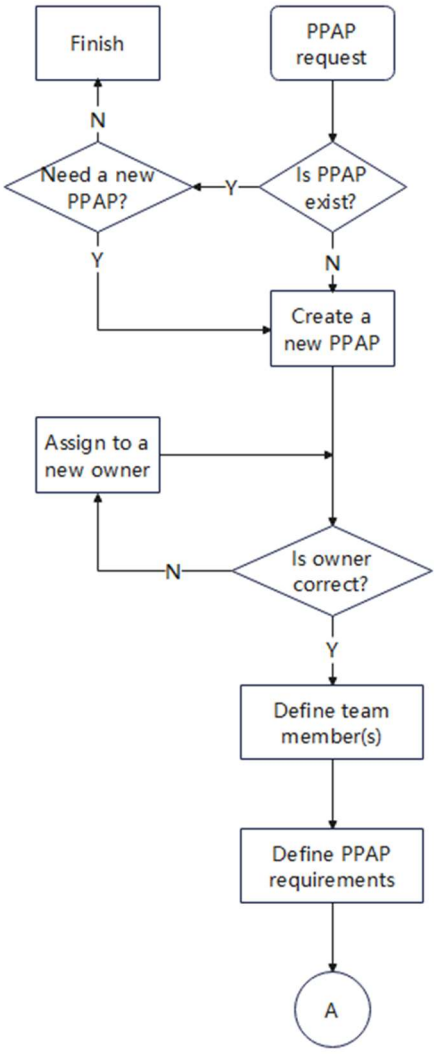
8. JPPAP Process Flow Chart

8.1 Process flow of completing PPAP in E-JPPAP system.



Resp.	Activities
Requester	1). Enter MPN. 2). Search existing PPAP.
Requester	Check if PPAP record exist.
Requester	1). Enter part's information. 2). Enter supplier's information. 3). Define owner.
Owner	
Owner	Confirm if the owner was assigned correctly
Owner	Define team member(s) who need to review the PPAP.
Owner	1). Define the PPAP level and submission elements. 2). Select the submission reason. 3). Confirm supplier's contact email. 4). Define the submission time.

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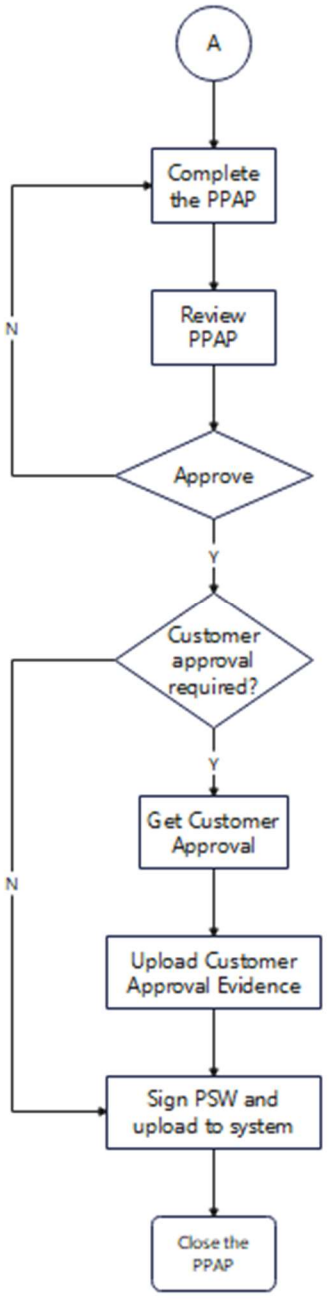

Resp.	Activities
Supplier	Submit PPAP as required.
Owner and Team members	Review the PPAP documents and samples submitted by supplier.
Owner and Team member(s)	Approve or reject the PPAP.
Owner and BU	Determine if customer approval needed.
BU	Get the customer approval evidence.
Owner	Upload to system.
Owner	Sign and upload PSW
Owner	

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9. Appendix

Appendix A: Examples of commodities require PPAP

Commodity Names	PPAP Required?	Remark
Antenna	Y/N	BTP Only
Assembly - Finished	Y/N	BTP Only
Assembly - Sub	Y/N	BTP Only
Cable	Y/N	BTP Only
Camera Module	Y/N	BTP Only
Connector	Y/N	BTP Only
Custom Label	Y	
Die Cut Materials	Y	
Display	Y/N	BTP Only
Fan	Y/N	BTP Only
Filter Optical	Y	
Filter - Mechanical	Y	
FPC & FPCA	Y	
Hardware	Y/N	BTP Only
Heatsink	Y	
Keypad	Y	
Lens	Y	
Magnet	Y	
Mechanical Pending	Y	
Metal	Y/N	BTP Only
Misc Assembly	Y/N	BTP Only
Motor	Y/N	BTP Only
Packaging	Y/N	BTP Only
Paint	Y	
PCB	Y	
Photonic Bulk Optics	Y	
Photonic Fiber	Y/N	BTP Only
Photonic Hardware	Y/N	BTP Only
Photonic Jumber	Y/N	BTP Only
Photonic Lasers	Y/N	BTP Only
Photonic Packaging	Y/N	BTP Only
Photonic Subsystems	Y/N	BTP Only
Plastics	Y/N	BTP Only

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Plumbing	Y/N	BTP Only
Power Supply	Y/N	BTP Only
Printing	Y/N	BTP Only
Pump	Y/N	BTP Only
PWA	Y/N	BTP Only
Rigid-Flex & Rigid-Flex Assy	Y	
Solar BUSBAR/Ribbon	Y	
Sound	Y/N	BTP Only
Textile	Y	

10. Revisions History & Change Details: *Go back to cover page – click **HERE***

Rev	Date	Originator(s)	Change Details
A	02/19/2009	C. Aguilar G. Santillan E. Porter	Initial release.
B	10/18/2010	C. Aguilar	Section 3.1.1 Added Feasibility Report definition. Section 5.4.3 Added Feasibility Report into JPPAP package Section 5.4.3 Added Packaging Proposal for Customer Approval into JPPAP package. (It makes reference to Section 5.6.6) Section 6.3 Added Top Management responsibility to develop, train and implement JPPAP activities in their own site. Section 6.5 Added JPPAP and removed FAIR.
C	12/13/2010	C. Aguilar	Section 5.4.3 .2 Adjusted based in customer Feedback / requirement. Unlimited scope for Customer/Jabil requirements and Yield Were added.
D	MAY/15/2011	Cesar Aguilar	Section 5.4.3 The item "Engineering Change Documents" was identified as 'R' for level 3 and it was adjusted to "S". (Figure 2, Page 7) Section 8.4 FAIR sketch in Page 22 and template included in JPPAP Templates were updated.

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E	AUG/17/2015	Roney Abraham	Section 5.6.1.2 Sample retention requirement revised.
F	Jul/01/2016	Roney Abraham	Section 2.1.2 Added to state clearly for the document scope Section 3.1.1 1). Added terms of: E-JPPAP, Jabil Representative, Design Record, Process Flow Diagram, Part Submission Warrant (PSW), F.A.I.R DEVIATION REPORT 2). Changed "PSW-Product Submission Warrant" to "Part Submission Warrant (PSW)" and updated the definition. 3). For PFMEA's definition, added the word "Failure". Section 3.2 Deleted original section 3.2: "High Risk Components".Original section 3.3 changed to section 3.2. Section 3.2 1). Added: "and for designated appearance items, an Appearance Approval Report required." for level 1. 2). Added "Notes: Detailed submission requirements for each level refer to 5.4." Section 3.3 1). Changed "Disposition Status" to "Approval Status" 2). Added "Or ELECTRIC NOTIFICATION SENDING BY E-JPPAP SYSTEM" Section 3.3.1 Changed "Full Qualification" to "Approved", and defined the "Approved" status. Section 3.3.2 1). Deleted original section 3.4.2: Restricted Qualification. 2). Added "Notes" about how to handle the case of urgent request for production build. Section 4 to Section 6: Changed the sequence. 1). Changed original section 6 to section 4 2). Changed original section 4 to section 5 3). Changed original section 5 to section 6 Section 4 1). Deleted original whole section "6.1 Jabil Design Engineering", "6.2 Supplier Quality Engineering", "6.4 Disposition Status", "6.7 Jabil Business Unit". 2). Added new whole section "4.1 PPAP Requestor","4.2 PPAP Owner", "4.3 PPAP Team Member". 3). Move original "6.8 Jabil Purchasing Representative" to"4.4", and re-defined the responsibility. 4). Changed original section 6.3 to section 4.5. 5). Changed original section 6.5 to section 4.6 6). Changed original section 6.6 to section 4.7, and changed "6.4.3" to "4.4.3". Section 5 Deleted original 4.5 Section 6.1 1). Changed "and/or" to "and". 2). Changed "as required" to "to supplier via E-JPPAP system notification, or by other methods if J-PPAP is not available" 3). Added: "via E-JPPAP system notification e-mail, or", "if E-JPPAP is not available", and "based on each Jabil site requirements" 4). Changed: "New Part/Product or New Tool" to

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			"Initial Submission" 5). Added "Construction or". 6). Changed: "Annual verification" to "Tooling Inactive > than 1 year." 7). Changed: " Production from tooling and/or equipment transferred from or to a different plant location" to " Parts Produced at Additional Location". 8). Added: " Other situation required by Jabil Representative." 9). Added "Notes" about the method of PPAP status communicating to supplier. Section 6.2 1). Deleted: " Regardless of the submission level requested, the supplier's quality records (PPAP Records) should contain the necessary elements for a Level 3 submission." 2). Changed: "current these elements" to "all PPAP elements" Section 6.3.1 Changed: "Guidelines for determining an appropriate submission level are presented in section 6.4 (below)" to "Jabil default PPAP is level 3, but still Jabil PPAP owner can change the level assignment base on customer requirement, part complexity, component risk evaluation, change level of part/process, tool, etc." Section 6.4 Changed: "Default" to "Each Submission" Section 6.4.1 1). Added: "and figure 2". 2). Added: " Notes: Design elements submission requirement only apply to those suppliers who have design responsibility/authority. Section 6.4.2 1). Added frame line for Figure 1 2). Added: " Notes: Actual required elements to be determined by Jabil representative. Jabil representative can add other additional requirements if needed,but can't remove the default elements defined by chosen level where the requirement is applicable." Section 6.4.3 1). Deleted word: "Level 3". 2). Redefined the submission level per AIAG PPAP Forth Edition which is effective from 2006. Section 6.4.3.1 Changed: "AIAG Guideline-book" to " AIAG PPAP Forth Edition which is effective from 2006. Section 6.4.3.2 1). Changed: " Notes: Some other Customer / Jabil applicable requirements are – but not limited to-" to" Customer / Jabil specific requirements refer to 6.5.17." 2). Moved the requirements to section 6.5.17. Section 6.5 The whole section was re-defined per AIAG PPAP Forth Edition. Section 8 Deleted original section 8, they will be in 00-MT80-1000- 00801_JPPAP Templates Section 8 Changed original section 10 to section 8.Deleted original section 10 "JPPAP Process Flow Chart"Figure 4, added new "JPPAP Process Flow Chart" Figure 3. Section 9 Deleted original section 9: "Quality Support Documentation", combined it to section 6.5.17

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G	Sep/19/2017	George Zhou	Section 2.1.3 Added to state the product qualification process substitution option as required by customer. Section 6.5.8 Added "The recommended level of study is 3 operators * 3 trials. ". Section 6.5.8.1 Changed "May be acceptable or Marginally acceptable" to "Gage system is marginally acceptable. Base on customer requirement, or control it not to be used for critical characteristics." Section 6.5.9 Changed "Note: The supplier shall measure all dimensions reflected in the drawing in three (3) samples per cavity/tool. Additionally, the supplier shall report in the FAIR their compliance with all drawing notes)" to "Notes: 1). Supplier shall measure all dimensions (except reference dimensions), characteristics, and specifications as noted on the design record and control plan in three (3) samples per cavity/tool." 2). Supplier shall report in the FAIR their compliance with all drawing notes.
H	Dec/30/2020	George Zhou	Section 4.2 Update the responsibilities of PPAP owner. Section 4.4 Update the responsibilities of Purchasing Representative.
I	Jun/22/2021	George Zhou	Section 3.1 Updated the terminology of GR&R and RBA. Section 5.1 Updated the document number of Jabil Supplier Requirements Manual. Section 6.1 Modify the timeline requirement of PPAP submission.
J	Dec/09/2021	George Zhou	Section 2.1.1 Removed scope statements repeat to section 6.1. Section 2.1.4 Added the scope of the purchased parts/materials. Section 3.1.1 Changed the GR&R method from Average Range to ANOVA. Section 5.3 Update the JPPAP template's document number to RO-RG80-00031. Section 6.1 Align the scope with section 2.1.1. Section 6.5 Added a note on how to select PPAP template. All sections: Changed "Dimensional Results – FAIR" to "Dimensional Results". All sections: Changed "Cp" to "Pp", "Cpk" to Ppk".

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K	Feb/14/2023	George Zhou	Section 4.2: Added the notes on customer approval.

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