

INTERNSHIP REPORT

CONVERGENCE BREAKTHROUGH FOR CARRY-OVER PARTS

KAPKIN SIERRA Pedro Samuel
Master Management Qualité
Université de Technologie de Compiègne
2012

Pedro Samuel KAPKIN SIERRA**Promotion 2012**

ACKNOWLEDGEMENTS

As a foreign student I would like to thank Faurecia for giving me the opportunity to carry out my master's internship period at their Caligny site in Lower-Normandy, France and for deploying to my entire disposition a series of tools and assistance not only to fulfil a requirement to complete the Masters in Quality Management at the Compiègne University of Technology but also for my personal and professional growth.

I would sincerely like to thank the following people for being always willing to help during the development of this project and also during all my internship period:

The ASQ and internship supervisor Ludovic Navarro for his wise guidance and his challenges leading always to discover by myself the answers I looked for.

All the persons concerned of all the functions mentioned in this work for daring to change their ways of doing their job.

To professor Gilbert Farges and Jean-Pierre Caliste, professor and also UTC internship adviser for the valuable knowledge imparted during the theoretical part of the formation and the assistance during the project execution and internship period.

To mi family in Colombia for giving me all the emotional support needed when facing a big challenge like the pursuit of a master's degree abroad.



GLOSSARY

PPAP: Production Part Approval Process

S/R: Safety/Regulation

PFMEA: Process Failure Mode Effect Analysis

R@R: Run at Rates

APQP: Advanced Product and Quality Planning

ECR: Engineering Change Request

GR#: Gate Review (Variable number from 1-5)

FPT: First Production Trial

MPT: Mass Production Trial

BOM: Bill Of Materials

PSW: Part Submission Warrant

SQA: Supplier Quality Assurance

ASQ: Advanced Quality Assurance

SQ&D: Supplier Quality and Development

PPM: Non-conforming Pieces Per Million of pieces delivered



TABLE OF CONTENTS

INTRODUCTION	8
1. Context	9
1.1 Faurecia group presentation	9
1.1.1 The four modules of the group's activity	9
1.1.2 The key figures	10
1.1.3 Presentation of Faurecia Flers	11
1.1.4 Products made in Flers	12
1.2 The Project background	12
1.2.1 Ordinary project's execution workflow	12
1.2.2 Reference's approval workflow	12
1.2.3 ASQ function presentation and activities	13
1.2.4 Program Light	14
1.2.5 Production Part Approval Process (PPAP)	15
1.2.6 The Part Submission Warrant (PSW)	15
1.2.7 The Carry-over follow up methodology at the moment of the project's re-start	16
2. Problem and action plan	19
2.1 The problem	19
2.2 Objectives, action plan and project planning	20
2.2.1 Objectives	20
2.2.2 Action plan	20
2.2.3 Project planning	21
3. Methodology	22
4. Risk analysis	24
5. Project's execution	25
5.1 Exploration of the problem	25
5.2 Check-Act stage	27
5.3 Plan-Do stage	28
5.3.1 The identification of functions and function's needs and responsibility allocation	28
5.3.2 The standardized BOM form	32
5.3.3 The individual reference action plan spreadsheet	33
5.3.4 The action plan folder	33
6. Results	35
6.1 Indicator's Results achievement and conservation	35
6.2 Comparison with problem's analysis	35
7. The Carry-over part follow up procedure proposal	38
8. The project's sustainability (The usage of the Carry-over part follow up file after the intervention)	39
8.1 The PSW follow up methodology applied into other projects (Plan)	39
8.2 The project's activities allocation (Do)	39
8.3 The project's activities execution follow up (Check)	39
8.4 The project's execution assessment (Act)	39
9. Conclusion	40
References	42
ANNEXES	43



List of tables

Table 1. Carry-over follow up indicators	16
Table 2. Convergence Breakthrough for carry-over parts project planning	20
Table 3. Program Manufacturing Leader (PML) – Carry-over follow up 5Ws diagram	28
Table 4. SQA (Caligny, Grojec and Walbrzych) – Carry-over follow up 5Ws diagram.....	29
Table 5. Design office – Carry-over follow up 5Ws diagram	29
Table 6. Program buyer – Carry-over follow up 5Ws diagram	30
Table 7. Project's pilot (ASQ internship student) - Carry-over follow up 5Ws diagram.....	30

List of graphs

Graph 1. Indicators' behavior before project' re-start	17
Graph 2. Indicator's status at project's restart	24
Graph 3. PSWs' approval status before project's execution	25
Graph 4. Affected projects before project's execution	25
Graph 5. References with deffined action plan before project's execution	26
Graph 6. Indicator's behaviour at project's Check-Act stage	27
Graph 7. Indicator's status at project's turn in date	35
Graph 8. PSWs' approval status after project's execution	36
Graph 9. Affected projects after project's execution	36
Graph 10. References with deffined action plan after project's execution	37

List of images

Image 1. 2010 revenues by business group	9
Image 2. Faurecia's clients	9
Image 3. Faurecia Caligny site under construction	10
Image 4. Components produced in Caligny	11
Image 5. Carry-over follow up database	15
Image 6. Standarized Bill Of Materials form	31
Image 7. Individual reference action plan spread sheet	32
Image 8. Action plan folder	33
Image 9. Approval information file	33

List of diagrams

Diagram 1. The project's contexts	11
Diagram 2. Approval process' standard workflow	12
Diagram 3. PDCA methodology adjustment	20
Diagram 4. Project's risk analysis	22
Diagram 5. Function's related to the Carry-over follow up file	27



INTRODUCTION

Aiming to attain the excellence in every function characterizing Faurecia, the ASQ responsible along with whom this work was carried out, started to follow the approval process for a group of parts called Carry-over; these pieces are used in the different projects he is responsible of. These project require pieces to be 100% approved.

After a period of execution and before achieving the expected results, the follow up process stopped being done leaving the pieces' approval process to have no one in charge of the different actions leading to their terminus, which caused uncertainty on the quality presented on the mentioned pieces.

This work explains the way the mentioned follow up was re-started. From the study of the problem's impact, passing through the database up date and latter operation which lead to different strategies to improve the information gathering, storing and management to finally propose an idea for the project's sustainability.



1. Context

1.1 Faurecia group presentation

The FAURECIA group is a leading automotive supplier occupying the second place at European scale and the eighth place in the world. Present in 28 countries, the group has 60000 employees and has a turnover of more than 12.7 million Euros. Today the group supplies pieces for all automobile constructors.

1.1.1 The four modules of the group's activity

Seating:

The main components:

- The structure and mechanisms compose the SMPG division

- The mechanisms:**
- Slides
 - Mechanisms
 - Associated products

- Foam padding
- The covers

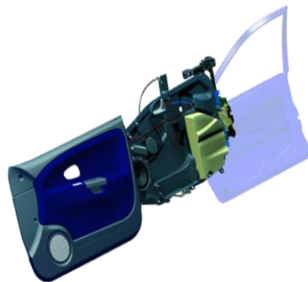


The interior vehicle:

The dashboard:



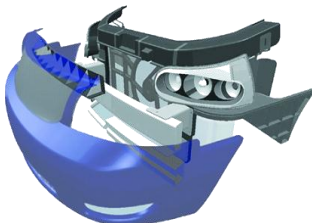
The door panels:



The acoustic module:



Bumpers:

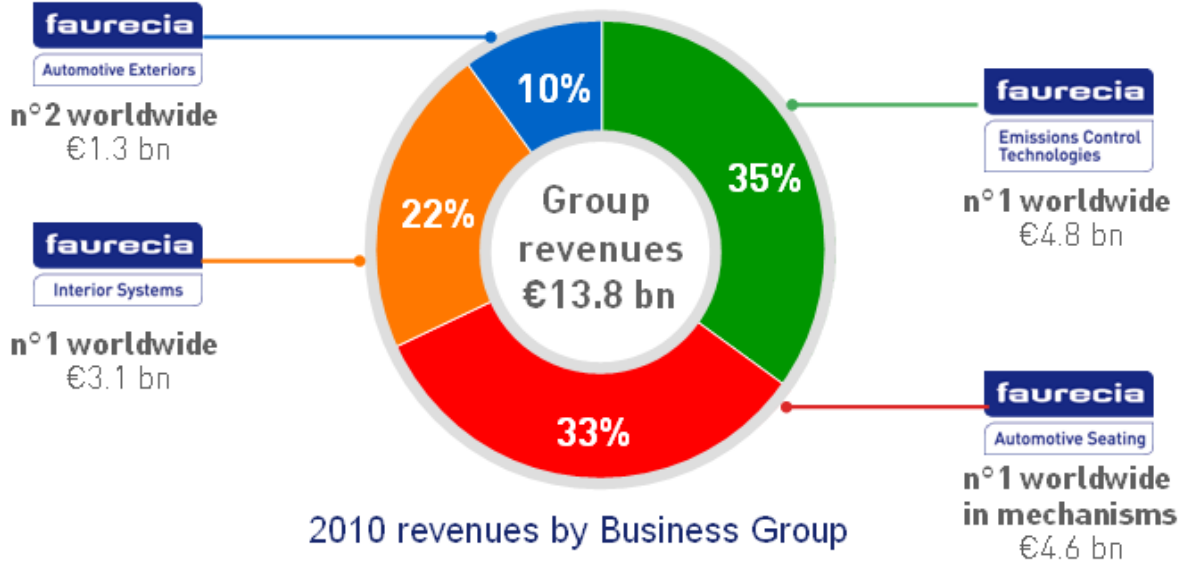


The exhaust systems:



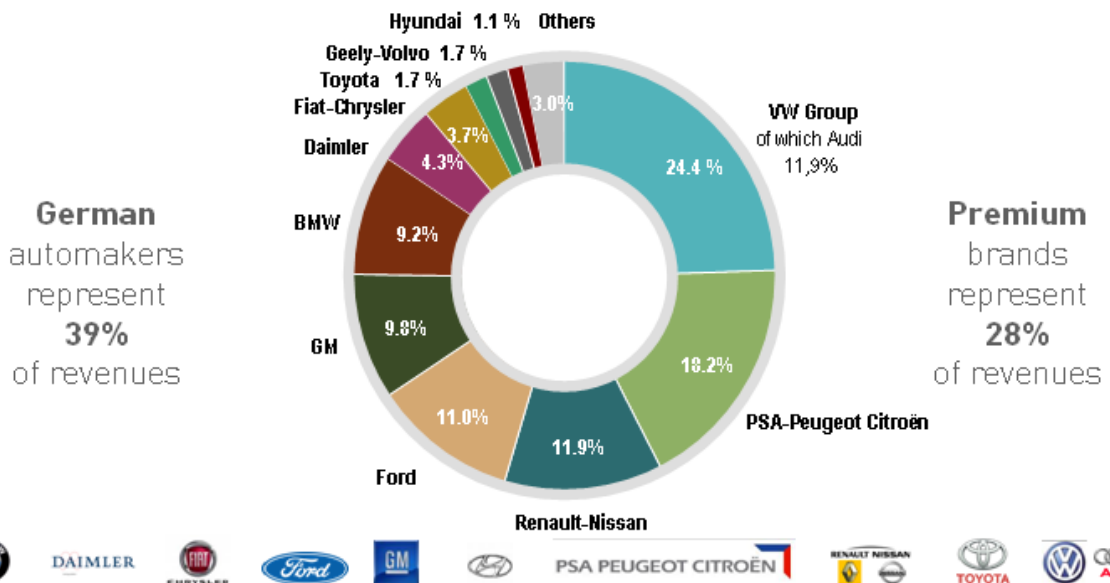
1.1.2 The key figures

Image 1



2010 revenues by business group [1]

Image 2



Faurecia's clients [1]



1.1.3 Presentation of Faurecia Flers

History

- 1946** Creation of Mécanique Générale et Outillage, entreprise created at Passais La Conception (Orne) by brothers Auguste et Maurice COUSIN (Transfer to Bois de Flers site on September 1952) - Workforce : 8 people
- 1960** Specialization on automobile mechanisms – Workforce : 80 people
- 1972** Second site in Flers : La Butte aux Loups – Workforce : 858 people
- 1990** Third site in Flers : La Blanchardière
- 1990** Creation of BERTRAND FAURE due to a consolidation of enterprises and foreign subsidiaries. COUSIN enterprise is named pilot site for mechanisms activity.
- 1993** Creation of BERTRAND FAURE FRANCE in November
- 1995** BERTRAND FAURE FRANCE (which Flers is part) becomes BERTRAND FAURE EQUIPEMENT S.A.
- 1999** The merger of ECIA society by BERTRAND FAURE was approved by both companies on the first of June 1999. After this operation, FAURECIA will be the group name and will constitute the head company. FAURECIA is :
- **N° 1 in Europe and N° 3 worldwide: Concerning automobile seating**
 - **N° 1 worldwide for seat setting mechanisms**
- 2001** On October 25th 2000 FAURECIA announces the acquisition of the automobile activities belonging to Allibert, which takes its consolidated sales up to 8 billion Euros.
- 2008** Grouping of the three Flers plants to create a pole called “Mécapolis” (See picture here under)

Image 3

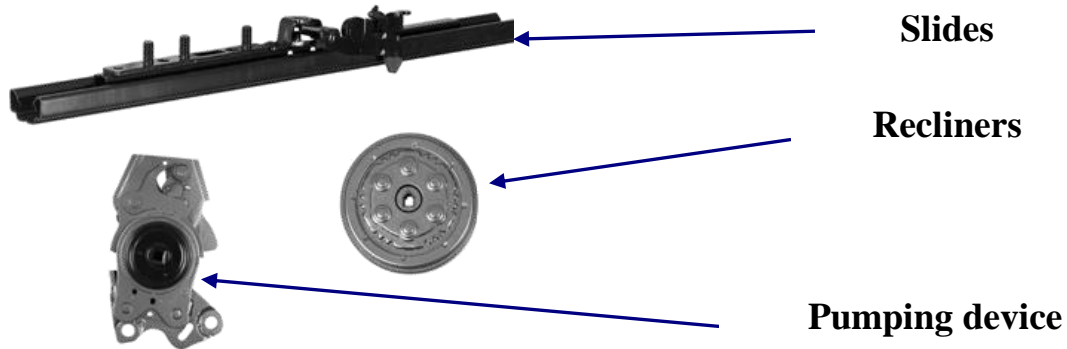


Faurecia Caligny site under construction [1]



1.1.4 Products made in Flers

Image 4



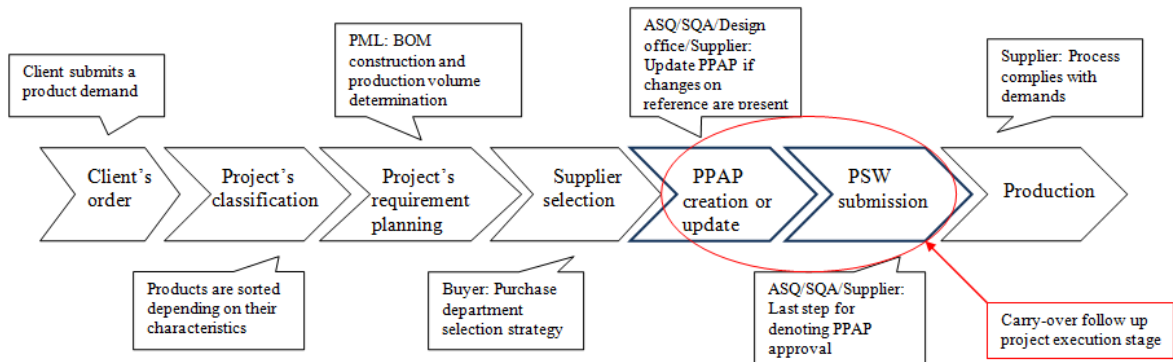
Components produced in Caligny [1]

1.2 The Project background

1.2.1 Ordinary project's execution workflow

To start the introduction to the project's environment, diagram 1 illustrates in a general way the different actions from the moment a client's order is received until it goes out to production line.

Diagram 1



The project's contexts [7]

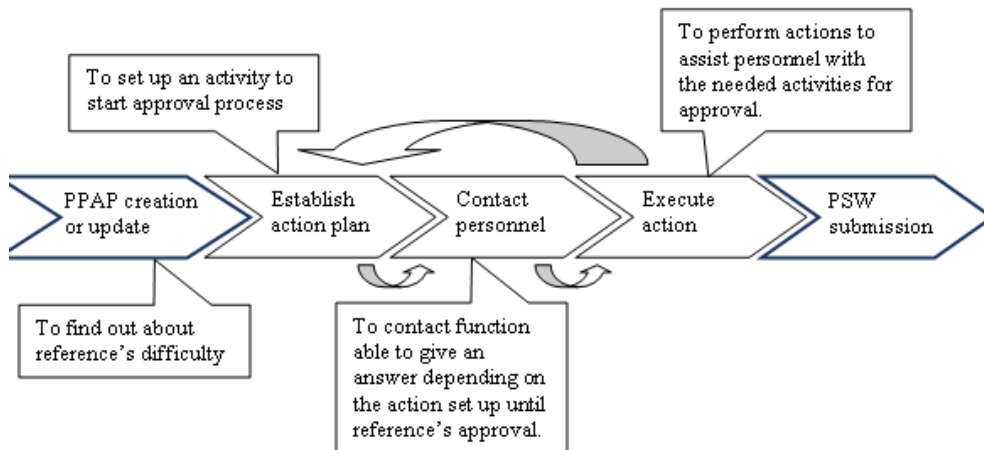
Concerning the purchasing department in which the project is carried out, it is composed by three functions; the buyers concerned of the tools and equipment acquisition and the ones in charge of the programs' purchases and the quality team concerned of the quality surveillance before arranging a contract and at the moment of the production of pieces, containing also a branch concerned of the development of key suppliers.

1.2.2 Reference's approval workflow

In order to illustrate a PSW approval's process, a standard workflow showing the general steps followed is shown in diagram 2. This diagram is a zoom in of the functions that are carried out between the two functions in the circle on diagram 1.



Diagram 2



Approval process' standard workflow [7]

1.2.3 ASQ function presentation and activities

The **SQ** function contributes to implement activities as described by purchasing processes and in adherence to Faurecia core procedures. It is composed of three functions supporting the purchasing activity.

- ASQ (Advanced Supplier Quality)
- SQA (Supplier Quality Assurance)
- SQ&D (Supplier Quality and Development)

As part of the SQ function, the ASQ will be the only one described since it is the one that this project aims to support.

As one of the purchasing functions, the Advance Supplier Quality is in charge of the activities listed below. Likewise, the underlined responsibilities are the ones in charge of the ASQ internship student.

“ASQ’s responsibility” [2]:

➤ APQP Management during Development phases:

- Deploy APQP related to the Development phase of Purchased Parts.
- Define the Risk and suppliers to be followed.
- Insure that suppliers sourced respect Mandatory rules and Audit criteria.
- Get Feasibility Commitment sign off for sourcing and for change implementation.
- Define Supplier Development plan with objectives, risk assessment, critical suppliers, critical parts, key milestones, deliverables, R@R and PPAP planning, resources & supports needs.
- Update every month the supplier Development Plan.
- Participate at Design Review Meeting and ECR Meeting.



- Facilitate exchanges between functions and suppliers for design freeze convergence.
- Escalate Alerts to Program and Management. Support suppliers for 8D completion.
- Lead Top 5 meeting with Program Purchasing Leader.
- Train the suppliers and make sure that the defined standards are properly applied (APQP elements).
- Follow the APQP progress with status report.
- ➔ **Run @ Rate & Process Audit**
 - Manage the Process Qualification at Supplier (Control Plan & Quality Basics implementation).
 - Conduct FPT & MPT Run@Rate and Process Audit for High and Medium risk components.
 - Get from suppliers their control record (i.e: raw material certification...) for all parts.
- ➔ **PPAP construction:**
 - Responsible for PPAP construction and New parts Approval during Development phase.
 - Coordinate with SQA Production Trial Runs on New parts during Development phase.
 - Ensure that 100% of S/R parts will be validated at GR3.
- ➔ **Transition to series:**
 - Ensure that all documentations are updated.
 - 100% of S/R characteristics secured.
 - Ensure that Incoming Inspection instructions integrate control means according supplier's Control Plan.

1.2.4 Program Light

It is called a program, a group of projects sharing certain characteristics. These projects are a group of mechanisms like Tracks, Pumps or Recliners ordered by different clients.

The characteristics mentioned above regardless their quantitative and qualitative ranges are the following:

- The total amount of money represented by the project's sales.
- The perceived appreciation of the customer's relationship with Faurecia.
- The value of operating margin.
- The ranges of the distances among the plants in which the different products are planned to be made.
- The number of suppliers participating on the project.

Depending on a defined scale, the results obtained for these characteristics for a project are positioned and categorized. In this case, for a project to be considered as Light, the results leading to the categorization have to be the lowest possible.

This project concerns programs that are composed mainly by carry-over pieces, which are references that are already in serial-life production and used by many projects.



1.2.5 Production Part Approval Process (PPAP)

All the components used to assemble the different products offered by the company are classified by references and indexes in order to precisely identify their characteristics and specifications. Depending on the evolution of every one of these pieces due to the changes on these characteristics and specifications, the evolution of the mentioned index is generated.

“For new parts as for old parts, for every index of a reference, the PPAP defines generic requirements for production part, including production and bulk material. The purpose of PPAP is to determine if all customer engineering design records 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”. [3]

As a concern to the ASQ responsible of a project, all the purchase parts have to be deployed a series of documents composing the PPAP.

The content of this set of documents includes among others:

- Designed records as drawings
- Process FMEA
- Process control plan
- Production process flow
- Material compliance
- Part submission warrant

Every reference in a project has to have a file containing this information in order to be treated. For its construction the part's supplier and Faurecia work together.

1.2.6 The Part Submission Warrant (PSW)

The role of the PSW is to confirm that all the documents composing the PPAP have been completed conforming to FAURECIA's demands, therefore this is the last document to be filled out.

The responsibility of filling out this warrant is a responsibility of the ASQ in charge of checking PPAP documentation's conformity once they have been completed by the supplier.

This document can have three different statuses concerning the approval of a piece, these statuses are:

- Approved: For a reference whose production characteristics have been validated by the ASQ as according to FAURECIA's requirements.
- Rejected: When some of the presented documentation contained in the PPAP do not demonstrate the production characteristics as in accordance with FAURECIA's requirements.
- Other: Expresses a state of temporary approval that permits the fabrication and delivery of parts by the time that some corrections are made on the production process in order to achieve full compliancy. This is known as a fabrication on deviation.



1.2.7 The Carry-over follow up methodology at the moment of the project's re-start

In the aim of creating a database for all the references used for program Light in order to document their PSW status and improve the number of these documents in approved status, the ASQ concerned started to document this information in the year 2011 in a spreadsheet named "Carry-over and New program PPAP status summary". This file contained relevant information about every reference and most importantly the PSWs' status attained for each one of them.

For the three possible statuses documentation of every reference is as follows:

- Approved: Index in file changes to index approved. PPAP OLD changes to SS0 which is the approved old status. PPAP NEW changes to Approved.
- Rejected: File remains the same and PPAP modifications are made by supplier until ASQ considers to up-grade PPAP approval to Approved or Interim Approved.
- Other: Index in file changes to PSW index, PPAP OLD changes to old status SS1, PPAP NEW changes to Interim approved, column Action is occupied by the current action on the references approval, in the column Pilot it is written the name of the person in charge of supplying the information for the current action and in column deadline the last date to receive information on the current action is documented.

The names of the columns mentioned above can be seen on image 5.

In case that a PSW is not approved at the right index, the column Index in the file changes to the last approved drawing index available.

This follow up methodology is supported by the fact that the different reasons why some PSWs are not approved are so varied, and the number of suppliers is such, that the possibilities leading to difficulties with these documents' approval are very broad that they are obliged to be treated individually.

The Carry-over follow up file

The image 5 shows the presentation of the database containing the reference's follow up information. See annexe 1 for better illustration.



Image 5

07/05/2012		Updated 03/05/2012		PPAP status Carry Over summary and New Program									
PROGRA	Multi	Delivers plant	Supplier	Name	Reference	Ind	PPAP OLD	PPAP NEW	Index PPA	Action	PILOT	Deadline	
FIAT 312US	N	Walbrzych	SPS	SPACER - CYLINDER UNTHREADED	4409096	9	SSO	Approved	9	PSW OK	X	X	
FIAT 312US	N	Walbrzych	FPT	RECLINER COMPONENT - PAVLZK - DOUBLE SLIDE	4432730	12	SSO	Approved	12	PSW OK	X	X	
FIAT 312US	N	Walbrzych	AMTEK	SUPPORT - ARRÊT DE GAINÉ APA MECA T7	4438436	4	SSO	Approved	4	PSW OK	X	X	
A9 Lear	N	Grojec	LISI	SCREW - HEAD FLAT WITHOUT M8 CRIMPED CLASS 10.9	4443940	6	SSO	Approved	6	PSW OK	X	X	
FIAT 312US	N	Walbrzych	SPS	CLIP - FIL DE BLOCAGE BIELLETTE APA	4448236	3	SSO	Approved	3	PSW OK	X	X	
A-Entry	N	Grojec	AMP ECTM	Interface planche 5 mm	4450586	3	SSO	Approved	3	PSW OK	X	X	
FIAT 500	Y	US	MORA	BALL RETAINER - 2 BALLS	4457874	3	SSO	Approved	3	PSW OK	X	X	
L846	Y	Grojec	MORA	TRAIN DE CAGE AV	4457874	3	SSO	Approved	3	PSW OK	X	X	
FIAT 500	Y	US	MORA	BALL RETAINER - 3 BALLS	4457876	3	SSO	Approved	3	PSW OK	X	X	
L846	Y	Grojec	MORA	TRAIN DE CAGE AR	4457876	3	SSO	Approved	3	PSW OK	X	X	
S4403	N	Grojec	NEINSA	TRACK COMPONENT - MEMORY GUIDE PLATE	4462594	3	SSO	Approved	3	PSW OK	X	X	
S4403	N	Grojec	NEINSA	TRACK COMPONENT - MEMORY GUIDE PLATE	4462595	3	SSO	Approved	3	PSW OK	X	X	
V10	N	Grojec	ALTIA GROUP	TRACK COMPONENT PLAQUETTE CALAGE V95	4462672	7	SSO	Approved	7	PSW OK	X	X	
V98	N	Grojec	ALTIA GROUP	TRACK COMPONENT PLAQUETTE CALAGE V95	4462672	7	SSO	Approved	7	PSW OK	X	X	
X87	N	Grojec	ALTIA GROUP	TRACK COMPONENT PLAQUETTE CALAGE V95	4462672	7	SSO	Approved	7	PSW OK	X	X	
B78	Y	Calign	LISI	AXE	4464990	4	SSO	Approved	4	PSW OK	X	X	
M3RM4	Y	Calign	LISI	AXE	4464990	4	SSO	Approved	4	PSW OK	X	X	
T3 China	Y	Calign	LISI	AXE	4464990	4	SSO	Approved	4	PSW OK	X	X	
V52 SAO	Y	Calign	LISI	SHAFT - DIA 0.0 mm	4464990	4	SSO	Approved	4	PSW OK	X	X	
A3 SAO	Y	Calign	LISI	SHAFT - DIA 0.0 mm	4464990	4	SSO	Approved	4	PSW OK	X	X	
ERAGON	Y	Calign	LISI	SHAFT - DIA 0.0 mm	4464990	4	SSO	Approved	4	PSW OK	X	X	
B78	Y	Calign	LISI	GEAR - DIA 23.7 mm 10 PIGNON 8 DENTS M2.1	4455006	9	SE2	Interim Approved	9	Pegic FRAUX: ECR requested, decrease basic diameter in order to increase tolerance in assembly and achieve capability. Diameter is number one hierarchy so design office study needed. Derogation demanded until 30/06/2012 PSW and derogation present in Plan	R Faux	30/06/12	

Carry-over follow up database [7]

To gather the information demanded by the project containing every reference, the most important information is listed below.

- Delivery plant: Plant to which the product is sent by the supplier, this in order to know who to ask about its PPAP documentation.
- Supplier: Actor to contact in order to have first hand information.
- Reference: Number to recognize every part. For non-approved references, this number contains a link to the action plan storing the history or the actions carried out towards its approval.
- Index: Last version of released drawing.
- PPAP Approved: Reference's approval status. There are two statuses: Approved when both PPAP Approved and PPAP Index are the same and Interim Approved when the reference is not approved at last drawing index.
- PPAP Index: Last drawing index approved for the reference.
- Action: There are two kinds: PSW OK when the PSW is approved and the action in place for the references to which the PSW is not yet approved. This last action is automatically up-dated on the Carry-over follow up file from the reference's action plan.
- Pilot: Is the person in charge of the listed action.
- Deadline: Is the latest date at which information on the action in course must be delivered.

See annex 1 for a more detailed image.

The approval indicators

Table 1

% de composants statués "Full approved"	94,1
% de composants statués "Full approved" au bon indice	86,1

Carry-over follow up indicators [7]



Since the approval of a reference can be at last index as for an approved or interim approved PSW or its PSW can be rejected causing the index in column Index to be greater than index in column Index PPAP, there are two states for reference's approval; "Full approved" and "Full approved" au bon indice, at good index for its meaning in English.

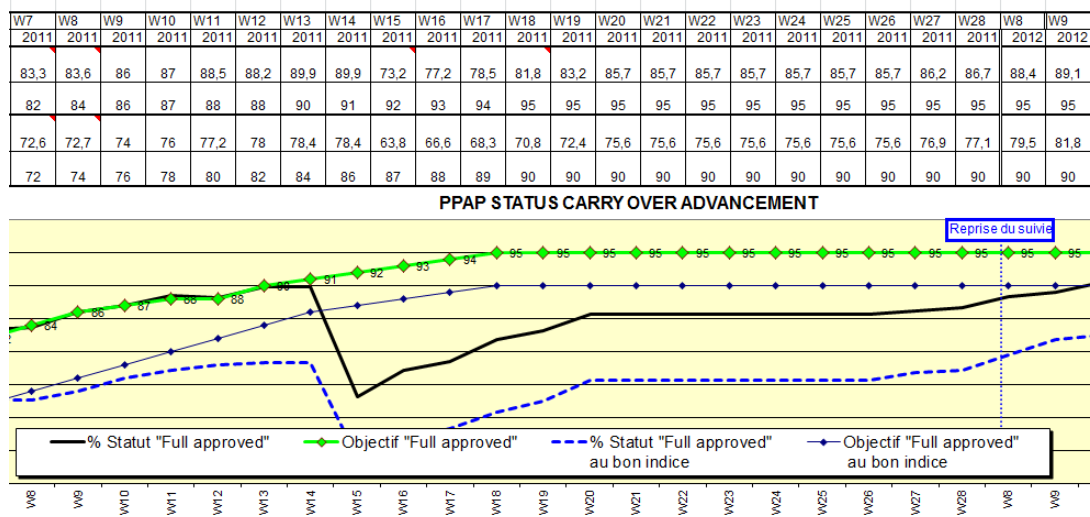
The calculation of both indices, shown on table 1 for a random week, is as follows.

% de composants statues "Full approved": This indicator is calculated from the number of references whose PSW is approved regardless the last drawing index in terms of the total number of references in the file.

% de composants statues "Full approved" au bon indice: This indicator is calculated from the number of references whose PSW is full approved at the last released drawing index in terms of the total number of references in the file.

Indicator's follow up chart

Graph 1



Indicators' behavior before project's re-start [7]

Graph 1 shows the indicators' behavior by week starting from week 16 2011 until week W17 2012, though there is a gap between week 28 2011 to week 8 2012, time in which the follow up was interrupted due to lack of time of the responsible ASQ.



2. Problem and action plan

2.1 The problem

For the subcontracting of the components needed for the company's products, the documents composing every reference's PPAP have to be approved by the ASQ concerned in order for the supplier to start production.

Sometimes difficulties preventing the approval of one of these documents arise although pieces can be fabricated under the condition of a correction to be made by the supplier, this permits that during this time, these not completely compliant supplies are used in final products. Some examples of the different problems leading to PPAP non-approvals and their effects on a project's course are listed below.

List of possible problems:

- Unsuccessful tool set up leading the supplier to quality unconformities.
- Impossibility to achieve demanded statistical control parameters.
- Tardiness on documentation's update required due to drawing changes.
- Disagreements between design office and supplier concerning one or many specifications; dimensions, essays or engineering specifications as tolerances, hardness values or surface finishes.

List of possible effects:

- Lack of capacity to assure quality for products.
- Incapacity to guarantee long-term product compliancy due to production process stability.
- Product's quality deterioration through time.
- Client's rejection of product.
- Quality problems in final product.

After sometime of usage, in June 2011, the ASQ in charge of program Light had to concentrate all his efforts on the new arriving references since the number of projects using them was growing. This situation forced him to leave aside the follow up of the Carry-over pieces.

After eight months of disregarding the PSW follow up file, the process is retaken and the findings on the current situation are the following:

- PSWs or Part Submission Warrant though they were signed as fully approved and they were already held by their responsables, they had not been asked for by the concerned ASQ nor had they been sent to him so they appeared as not approved in the Carry-over follow up file.
- The different actions carried out and in course intended to reach PSWs approval were not documented so no historical information concerning this activities and enabling its follow up was kept.



- Due to the missing coordination among the different functions related to the information regarding the different references' approval process, there were difficulties to complete the data contained in the Carry-over follow up file, so the actions depending on it took longer to be executed or in the worst case were not.

All the mentioned difficulties brought to program Light a lack of control over the reference's approval because the actual status of the PSWs belonging to every reference was not certainly known, which risked sudden quality problems to appear.

2.2 Objectives, action plan and project planning

2.2.1 Objectives

- To manage the information concerning the PPAP approval of non-approved references in order to follow and guide the actions taken on this subject until their approval.
- To set and accomplish the goal for the number of approved references for the two indicators in use and to give continuity to this accomplishment by creating tools to facilitate the projects control.
- To determine the responsibilities concerning the Carry-over follow up file of all the functions related to the project carried out so they can deliver and receive what is strictly necessary.
- To create a proposition of a procedure to guide the application of the Carry-over follow up methodology into any project concerning Carry-over pieces in order to perpetuate the projects achievements with the available means.

2.2.2 Action plan

Where to start?

First of all, an important step for the development of the project is to get to know the means to measure its performance, the needs for information to execute its activities and the sources to attain it. Along with this, a full recognition of the environment of the project is needed in order to guarantee an accurate out-put for every concerned actor.

Next to the recognition phase, part of the operational part is carried out in order to update the PSW's status file with the information that is available but had not been asked for by the responsible ASQ.

As the different actions required by the project are discovered and learned, there will come along the improving propositions for the different possible lacks of coordination among the different activities and persons concerned in it. Due to this, different strategies will be designed in order to coordinate these actions and supply support to the interaction among the functions concerned.

The final stage will be to gradually implement the different tools into the system and measure its effects.



Summarizing, the different stages are:

- Study of the current state of the Carry-over follow up file indicators.
- To start up dating the information in order to deliver results and to learn about the follow up process.
- Come up with strategies to improve the action plan follow up, the information management and the communication among the different functions.
- Communicate and implement each one of the strategies and measure the results.

2.2.3 Project planning

Table 2

Carry-over follow up	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22
Check-Act stage															
Knowledge of the project	■	■	■												
Information recovery			■	■	■	■									
Database update			■	■	■	■									
Plan-Do stage															
Innovations development and application						■	■	■	■						
Innovations application and projects operation									■	■	■	■	■	■	■
Development of procedure proposal														■	■
Report writing											■	■	■	■	
Correction of report															■

Convergence Breakthrough for carry-over parts project planning [7]



3. Methodology

At the beginning of the project, an order of execution based on the Check-Act-Plan-Do is established in order to define a developing plan to execute it. This order is based on the PDCA methodology, but since the project is not started from scratch, “the different phases are positioned according to the situation”[4] and separated into two stages composed of two phases.

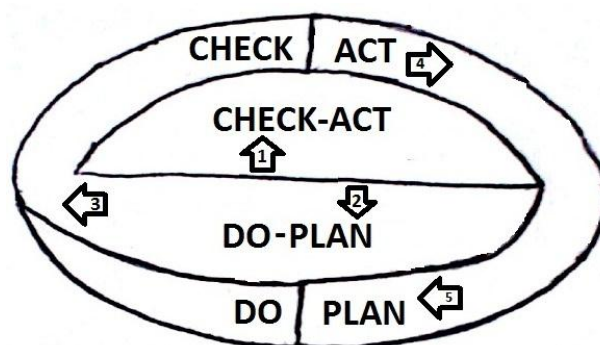
This order is explained as follows:

Check-Act: In this stage, these two activities will be carried-out together because as soon as the internship started, the project had to be continued. The Check phase will be performed because there is already a methodology for the project’s execution, therefore its way of working has to be known beforehand in order to re-take its operation. At the same time, the Act phase will enter into the game because results on the operation of the project have to start appearing. These results will be achieved by catching up the database with the information that though produced during the lack of follow up and available at the responsible’s hands, had not been included in the database.

Plan-Do: Gradually, as the project’s environment becomes more familiar, different ideas for its improvement will start to appear, to be later worked on the Plan phase. In this same stage but in the Do phase, as the ideas for improvement start to appear, they will be developed and applied in order to check their usefulness and the improvements they can possibly bring to the project’s performance.

This strategy is illustrated on diagram 1, which starts from its inner part with the project’s development strategy of the Check-Act – Plan-Do order: Then it moves to the classic Deming wheel starting from the Check phase; because what was executed in the mentioned inner cycle has to be tested, then in the Act phase, with the Acquired experience, actions to improve are introduced. In this phase, the collection of information concerning improvement ideas’ performance is gathered in order to later refine such improvements in the Plan phase and this way to restart the cycle with the application of the refined improvements in the phase Do.

Diagram 3



PDCA methodology adjustment [7]



To define the information needs of every one of the functions demanding the information gathered by the project, a 5Ws (Who, What, Where, When, Why?) model will be set up for every interaction between the project and the different such functions. This model allows to narrow down to the specific all that has to be delivered and received from every one of the mentioned functions and it will contribute to clarify the concerned actors' roles.

Once results have been achieved for project Light, a comparison of the initial situation and that achieved after the intervention is set up in order to determine the results acquired by the project and this way an application into other projects besides the Light could be justified.

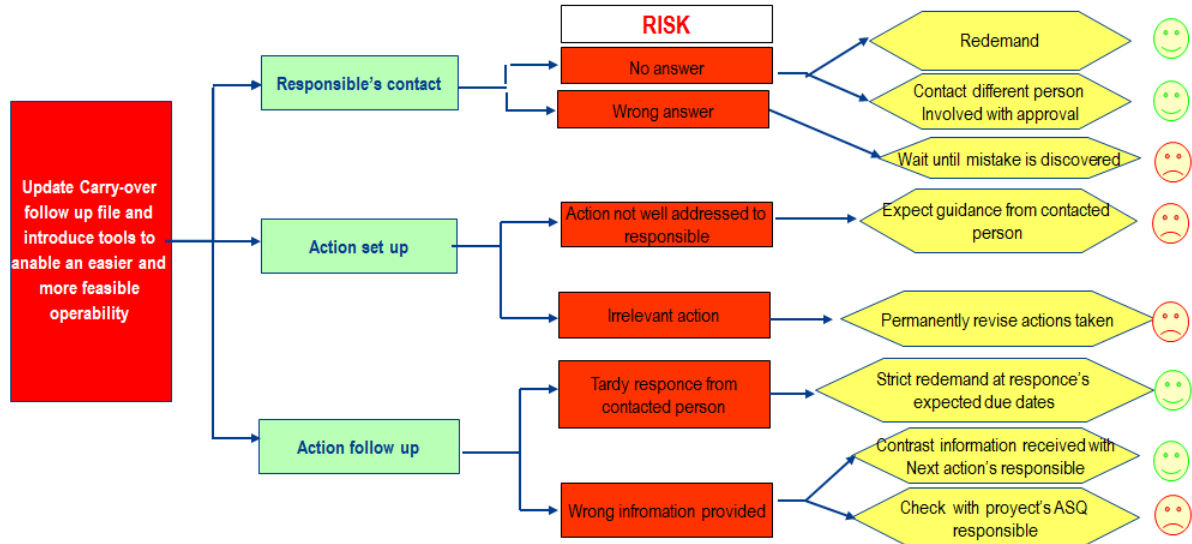
Once improving results have been guaranteed, a procedure will be created in order to guide the mentioned application into projects whose managers could be interested.

Finally, some ideas of improvement not developed in this project will be discussed in order to set up points for further ameliorations that will broaden the scope initially conceived for it.



4. Risk analysis

Diagram 4



Project's risk analysis [7]

For this project the actions Responsible's contact, Action set up and Action follow up were considered to bring the strongest risks to the project's execution, see diagram 2, besides, these actions are the ones the project's pilot is responsible of so its careful execution has to be guaranteed.

For the evaluation of the actions taken to prevent the risk, they are graded as difficult to carry out with a red smiley face and those considered as easy to do it are identified with a green smiley face.



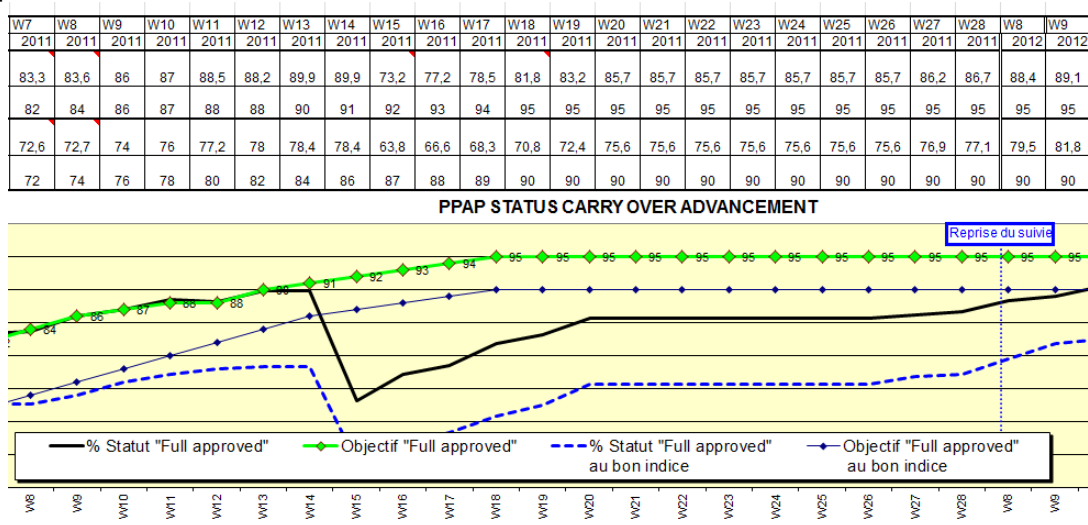
5. Project's execution

5.1 Exploration of the problem

In order to provide a clear vision of the impact that the non-approval of PSWs bring to program Light in general and to every project to which the troubled PSWs belongs to in particular, the following analysis is presented.

Indicator's status at the moment of project's restart

Graph 2



Indicator's status at project's restart [7]

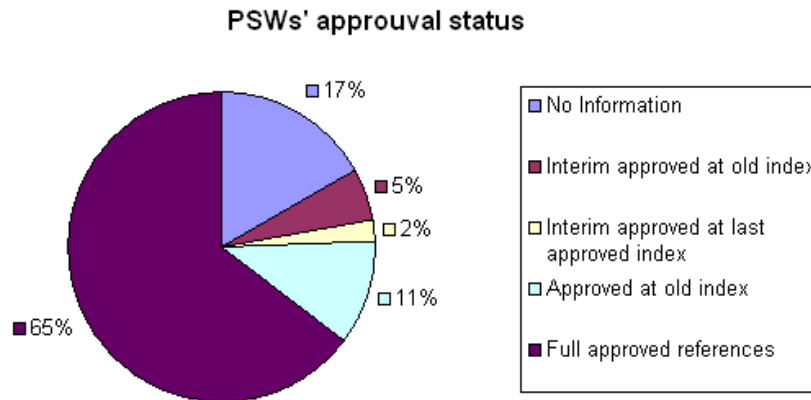
As it can be seen on graph 2, the indicator's status evidence that the approval situation found at the moment of the project's restart did not meet the objectives set for them, which demonstrates the lack of attention paid to this activity.



Number of PSWs missing information, interim approved at old index, interim approved at right index and approved at old index

For all the projects considered by program Light, the number of PSWs missing information, interim approved at old index, interim approved at right index and approved at old index at the moment of the project's restart is shown in the following pie chart.

Graph 3



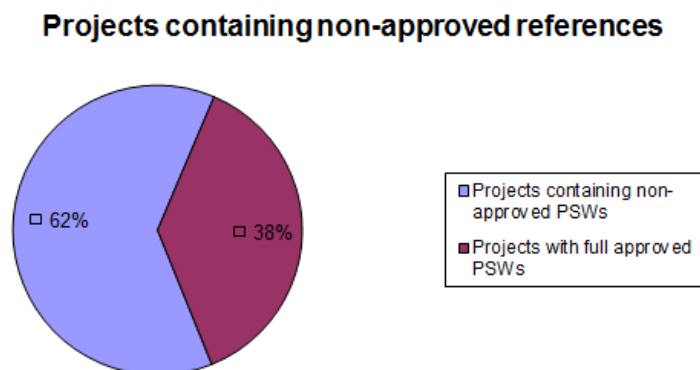
PSWs' approval status before project's execution [7]

Graph 3 shows the differently affected PSWs in terms of percentage of the total number of references managed by program Light. As it can be seen, 35% of the references to which the affected PSWs belong to risk generating difficulties due to its non-approved status.

Number of projects concerned

Graph 4 below shows the projects in which there is at least one non-approved PSW.

Graph 4



Affected projects before project's execution [7]

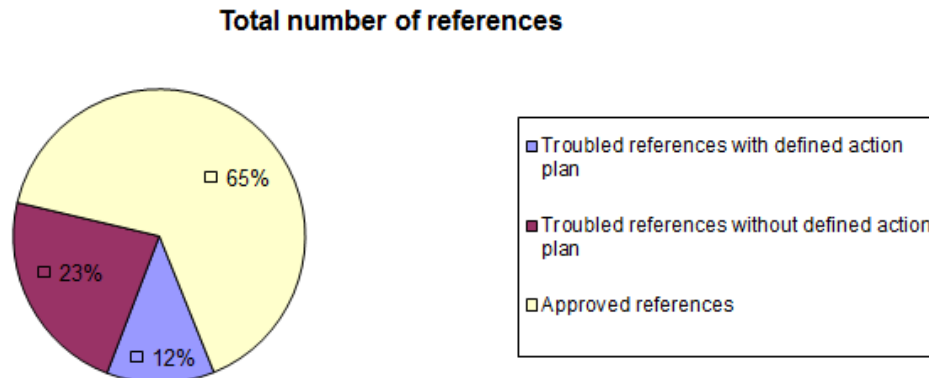
Regarding the upper analysis more profoundly it can be seen that references having a non-approved PSW are present in 62% of the projects considered in program Light as shown on graph 4.



Number of projects with a defined action plan

Graph 5 below illustrates in terms of percentage over the total amount of references the ones; approved (65%), having no action plan leading to their PPAP approval (23%) and those having an action plan in course regarding their PPAP approval (12%).

Graph 5



References with deffined action plan before project's execution [7]

5.2 Check-Act stage

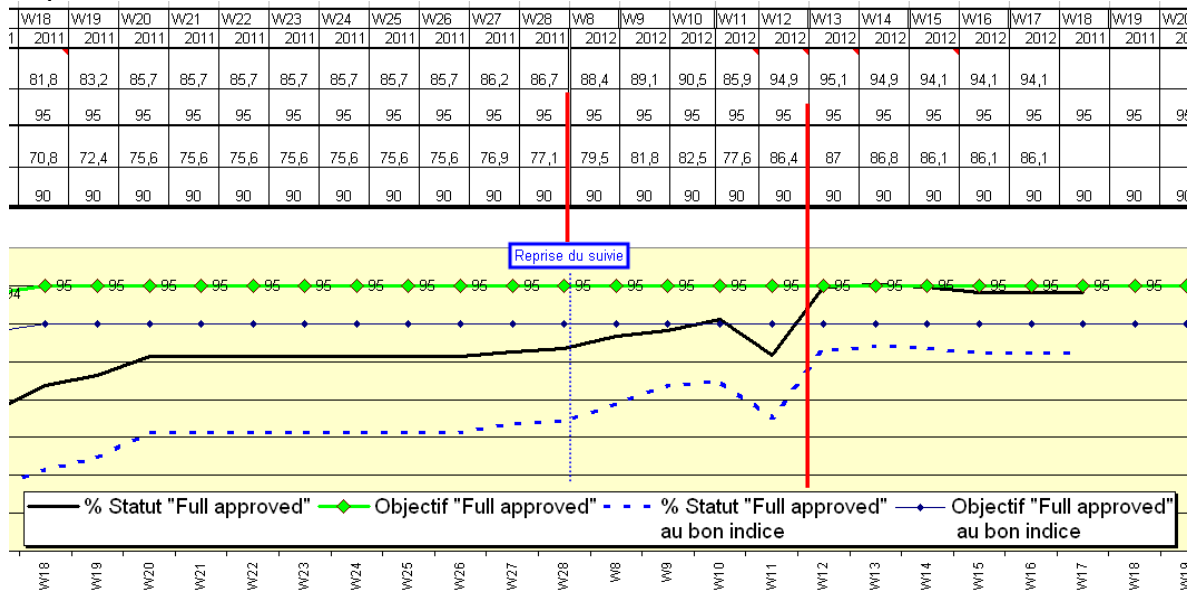
At the moment of the project's re-start, the first step to the update of the file was to ask every one of the persons in charge of every non approved reference about the state of their approval. For this, the study of the different activities concerned by the reference's approval had to be done in order to learn who to contact for demanding this information.

Through the mentioned action, many of the PSWs already signed stating the PPAP approval of certain references were recovered and therefore masked as approved in the follow up file. For those references whose PSW had not been signed, a report of the actions taken for their approval was asked for with the intention of giving them continuity.

In this phase the indicators started to improve and results for the reference's approval were rapidly achieved. The progress in the results of these indicators in terms of percentage of references approved during the Check-Act stage is shown below.



Graph 6



Indicator's behaviour at project's Check-Act stage [7]

As shown on the graph 6, for the period between week 8, which is the one in which the project was re-started, marked on the graph as “Reprise du suivi”, and week 12, the growing tendency of the curve evidences a rapid acquisition of approvedPSWs that as mentioned on the problem's definition, were already approved but had not been included on the Carry-over follow up file.

5.3 Plan-Do stage

As the activities concerned in the project were carried out, the acquaintance with its environment grew so possibilities of improvement started to appear due to the possibility for critically observing how the activities were performed. All these modifications are intended not only to facilitate the project's present intentions but also to give it sustainability and perpetuate its usage through achieving an easy operability.

The contributions to the project are the following:

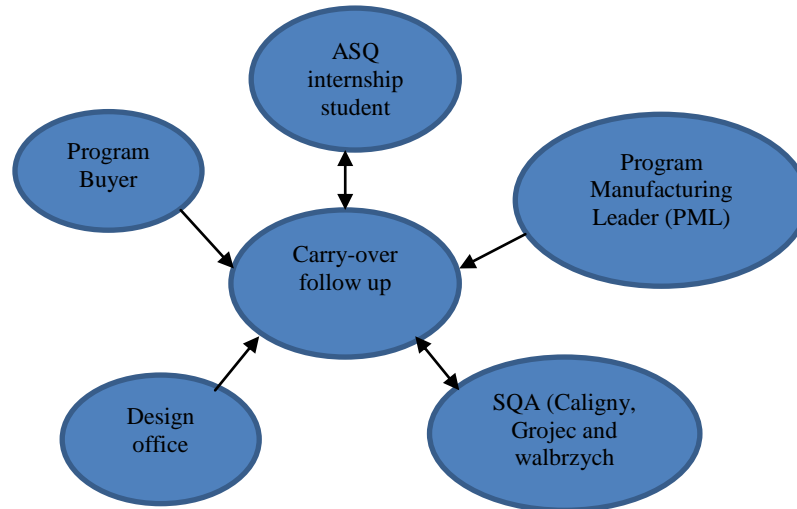
5.3.1 The identification of functions and function's needs and responsibility allocation

Through the study of the different procedures that define the different activities of every one of the jobs concerned by the project, the interactions in terms of responsibilities and needs of every one of them regarding the project were defined, this in order to “ensure that appropriate communication processes are established within the organization”[5], which in this case the organization is interpreted as the group of people interacting inside project Light.

The following diagram illustrates the different functions related to the project.



Diagram 5



Function's related to the Carry-over follow up file [7]

Diagram 5 shows all the functions from which the Carry-over follow up file receives information and/or to which it supplies it. At this point of the project the project's pilot function is carried out by the ASQ internship student.

By developing a 5Ws analysis for each one of the project's interactions with every function related to it, expressed with an arrow on the graph above (\longleftrightarrow) or (\longrightarrow) depending if the involved function has a need and a responsibility with the file or if it only has a responsibility with it, the type of interaction of every one of them concerning the file are identified. As a result, these needs and responsibilities were recognized and specified.

The 5Ws diagrams that helped to identify the function's responsibilities and needs are showed below.

Table 3

	(Responsibility) with the Carry-over follow up file	(Need) From the PSW follow up file
What?	To transmit information about the references used by incoming projects.	N/A
Who?	Program Manufacturing Leader	N/A
Where?	N/A	N/A
When?	At project Bill Of Materials elaboration	N/A
How?	Disregard of information uses and needs by the different concerned functions	N/A
Why?	To supply a maximum of information about used references.	N/A

Program Manufacturing Leader (PML) – Carry-over follow up 5Ws diagram [7]



From table 3 it can be evidenced that the PML function works as an information supplier for the file since the only interaction with it is the “Responsibility” for supplying information about the references used for incoming programs. Due to the importance of this information, with the aim of ensuring its complete transmission, a standardized way of gathering it, latter discussed, was conceived.

Table 4

	(Responsibility) with the Carry-over follow up file	(Need) From the PSW follow up file
What?	To keep the Carry-over follow up file up to date	Up to date information about used references
Who?	SQA (Caligny, Grojec and Walbrzych)	SQA (Caligny, Grojec and Walbrzych)
Where?	N/A	N/A
When?	Everyday	Everyday
How?	To follow and set up action plans for references approval	Permanent access to Carry-over follow up file
Why?	To accomplish goal for approval indicators	To follow action plans

SQA (Caligny, Grojec and Walbrzych) – Carry-over follow up 5Ws diagram [7]

Table 4 evidences that the SQA function is related to the Carry-over data base as a supplier of information because it is in charge of following some of the actions taken aiming a reference’s PPAP approval and as a client because it needs the information contained in the file in order to respond to an action plan or any possible situation involving a reference’s PPAP update.

Table 5

	(Responsibility) with the Carry-over follow up file	(Need) From the PSW follow up file
What?	Provide complete assessment for modifications on drawing’s characteristics	N/A
Who?	Reference’s responsible designer	N/A
Where?	N/A	N/A
When?	When demanded by SQA or ASQ concerned of reference’s approval	N/A
How?	With the lack of information concerning the approving reference’s information needed for modifications	N/A
Why?	Lack of historical information	N/A

Design office – Carry-over follow up 5Ws diagram [7]



Table 5 evidences that the responsibility of the design office with the follow up file is really present through the ASQ and SQA function, so there is not a real interaction between the first mentioned function and the recalled follow up.

Table 6

	(Responsibility) with the Carry-over follow up file	(Need) From the PSW follow up file
What?	To provide information on references used for incoming projects.	N/A
Who?	Program buyer	N/A
Where?	N/A	N/A
When?	At programs' attribution	N/A
How?	With the lack of information specified by the BOM creator	N/A
Why?	To have information for determining appropriate suppliers	N/A

Program buyer – Carry-over follow up 5Ws diagram [7]

From the analysis presented in table 6, it is shown that the responsibility of the program buyer is to provide information to the file. Since the problem is related to the BOM, this indicates that possibly this document could collect the information needed by the file and needed to be provided by the analyzed function.

Table 7

	(Responsibility) with the Carry-over follow up file	(Need) From the PSW follow up file
What?	To store information about a reference's approval	To receive information on references used for incoming projects.
Who?	The project's pilot	The project's pilot
Where?	N/A	N/A
When?	At a reference's action plan set up and follow up	At BOM reception
How?	N/A	
Why?	To well address the actions aiming the reference's approval.	To have appropriate information for contacting the right person at action plant set up.

Project's pilot (ASQ internship student) - Carry-over follow up 5Ws diagram [7]

Table 7 presents the relationship between the ASQ internship student and the follow up process in terms of the responsibilities and the needs that engage him to it. As pilot of the project, the ASQ internship student is the keeper of the file, reason for which the person in this function is obliged to continuously update the information contained in it (the responsibility) received from the related functions (the need), in order to guarantee that the information contained is the product of the most recent



actions taken on the reference's approval and that followed reference's belong to the most recently incoming projects.

5.3.2 The standardized BOM form

The next improvement idea was a result from the 5Ws analysis and it was to create a standardized spread sheet, shown on image 6, with the information demands needed to supply the information required for the project's operation.

This idea is identified thanks to the function of providing information to the project shared between the PML and the Program buyer. The fact of creating a standardized form including all the information needed to supply the needs of the concerned functions permits a rapid flow of information, enabling punctual decision taking. Image 6 shows a generic presentation of the mentioned form.

Image 6

The image shows a spreadsheet template for a standardized Bill of Materials (BOM) form. It includes the Faurecia logo and a header section with 'Year', 'Project's timespan', and 'Average production volume'. The main table has columns for 'Reference', 'Index', 'Name', 'Number of pieces per unit', 'Supplier', 'Delivery plant', and 'Volume'. A red box highlights a section for 'Volume of production per year' with a grid for data entry.

faurecia > sièges d'automobile							Year	Project's timespan			
							Average production volume				
Reference	Index	Name	Number of pieces per unit	Supplier	Delivery plant	Volume	Volume of production per year				

Standardized Bill Of Materials form [7]

This spread sheet is shared between the Program Manufacturing Leader and the Program Buyer in order for them to work on an standardized document containing the data they needed for their job and that, which they are to supply, needed not only by the ASQ function but for the other functions. This information is then transmitted to the ASQ internship student (the project's pilot) to be included in the follow up file.




5.3.3 The individual reference action plan spreadsheet

The next modification was the creation of a history database to list chronologically all the actions carried out in the attempts for a reference's approval. View image 7.

Image 7

Status	What	When	Who
Done			
Done			
Done	Information about action taken	Due date for answer on the action	Person in charge of providing information
To do			



 Inert line here

Summary
Information on the reference initially found in the database

Personnes concernées
Persons initially cited as concerned

Individual reference action plan spread sheet [7]

For every non approved reference, a spread sheet containing some of the parameters of a 5Ws model is created in order to well document and address the actions carried out to complete the references' approval process. The parameters that support this document are the following:

- **Status:** In this column the word "Done" denotes that the action in front of it on the same row has been executed and the words "To do" denote an action in course for which an answer is expected.
- **What:** It is the action that was carried out and contains the historical information or is that being currently carried out.
- **When:** It is the date for which the answer requested about the action is expected.
- **Who:** It is the person responsible for delivering the information.

The "Insert line here" is intended to guide the user to insert a line when there is no space left to register an action, in order for him not to have to set the cell colour format parameters for column "Status".

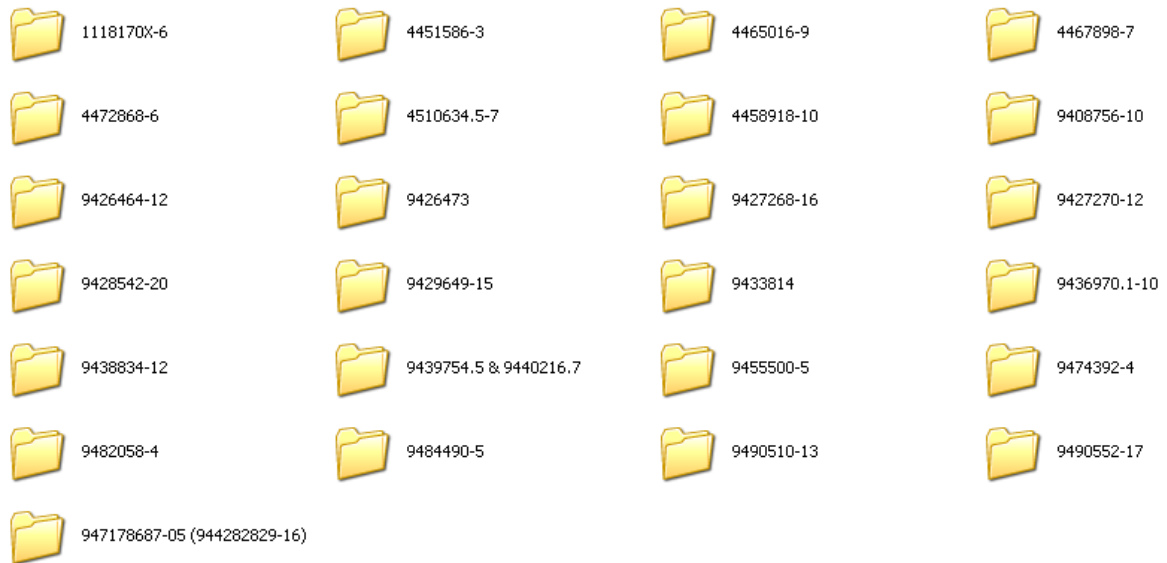
The "Summary" space is intended to contain the information initially found on the follow up file for the reference for which the action plan spreadsheet is created, as well as for the "Persons concerned", case which lists the persons initially found as involved with the references approval.

5.3.4 The action plan folder

To store the entire action plan's spread sheets; the action plan file shown on image 8 was conceived. Inside it, a file for every reference was created to store all the information support generated around a reference's approval, such as drawings, e-mails, metrology reports, among others.



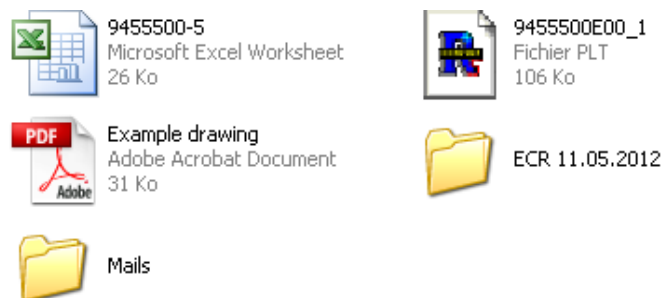
Image 8



Action plan folder [7]

To have a view inside one of the files containing the information related to a references' approval process, the content belonging to reference 4451586-3 is shown on image 9.

Image 9



Approval information file [7]

As it can be seen the folder for reference 9445500-5 contains, from left to right and from top to bottom, The Action Plan spreadsheet in which all the actions taken to approve the PPAP are documented as said before, the part's approved index drawing, an example of a similar reference drawing intending to show the change required on the reference's current index drawing, in order to supply the design office the information needed to implement the changes leading to the reference's PPAP approval, the Engineering Change Request (ECR) intended to supply the information gathered to support the modifications on the reference's drawing and the mails containing information about the approval process saved as support records.

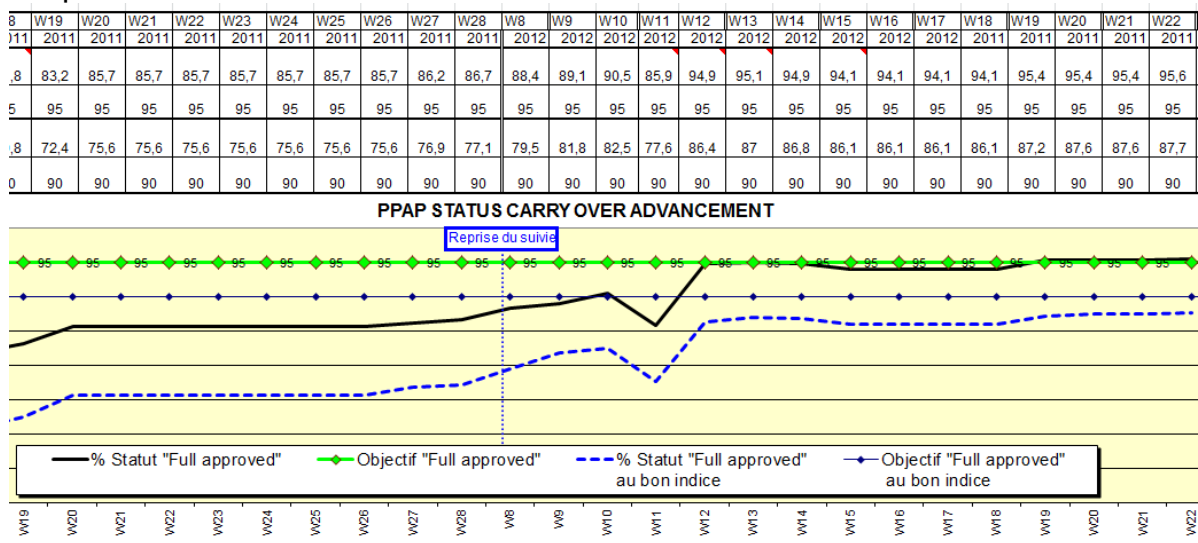


6. Results

6.1 Indicator's Results achievement and conservation

With the project's execution the indicators' expected results were achieved and kept during the considered time spam as shown on graph 7.

Graph 7



Indicator's status at project's turn in date [7]

Graph 7 shows the curves expressing the results achieved for both indicators. As it can be evidenced, indicator (% Statut "Full approved") reaches its objective of 95% of approved references, as indicator (% Statut "Full approved au bon indice") though not at its objective of 90% of full approved references, shows a climbing tendency toward it.

6.2 Comparison with problem's analysis

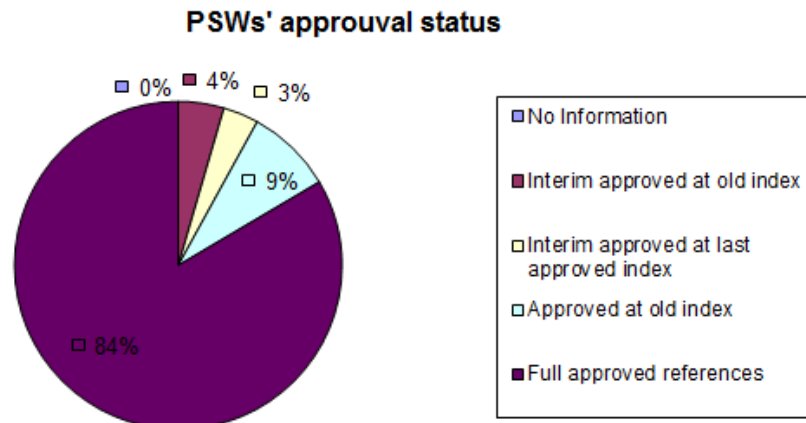
Aiming to contrast the situation achieved thanks to the project's execution with that shown at the exploration of the project, the same structure for the analysis presented for this last one is established to present the situation achieved by this work, enabling an easier comparisons between the various results.

Number of PSWs missing information, interim approved at old index, interim approved at right index and approved at old index after intervention

For all the projects considered by program Light, the number of PSWs missing information, interim approved at old index, interim approved at right index and approved at old index at the moment of the project's restart is shown in the following pie chart.



Graph 8



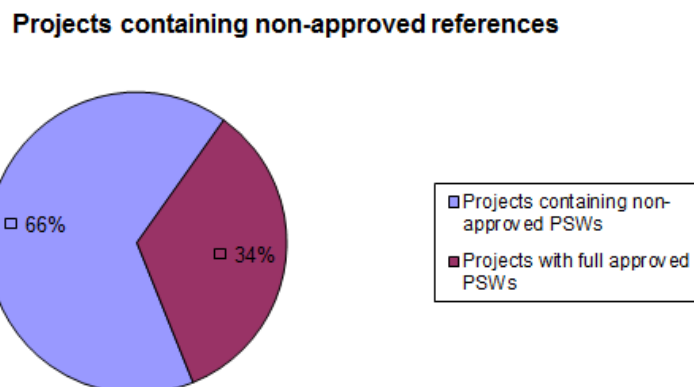
PSWs' approval status after project's execution [7]

Graph number 8 above shows the differently affected PSWs' reference in terms of percentage of the total number of references managed by program Light. As it can be seen, 16% of these references risk generating problems due to its non-approved status contrary to the 35% shown on the like above graph for the exploration of the project.

Number of projects concerned after intervention

Graph 9 shows the projects in which there is at least one non-approved PSW, after the project's execution. This graph shows that references having a non-approved PSW are present in 66% of the projects considered in program Light.

Graph 9



Afected projects after project's execution [7]

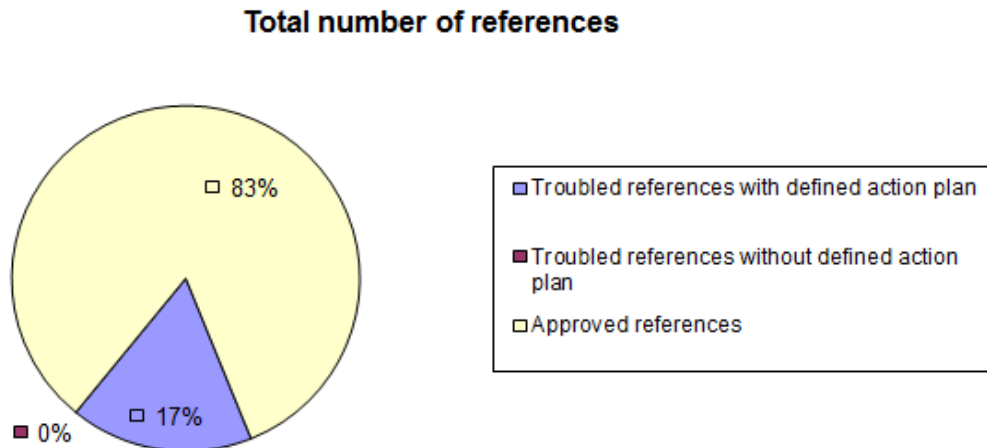
Comparing graph 9 to graph 4, it is evidenced that the number of affected projects stayed the same.



Number of projects with a defined action plan

Graph 10 illustrates in terms of percentage over the total amount of references the ones; approved 83%, having no action plan leading to their PPAP approval 0% and those having an action plan in course regarding their PPAP approval 17%. Contrasting this graph with graph number 5, it can be perceived the improvement in terms of efficiency at minding non-approved references.

Graph 10



References with deffined action plan after project's execution [7]



7. The Carry-over part follow up procedure proposal

In order to perpetuate the usage of the tools used and developed by this project, a strategy for its continuation is set up.

As it was planned in the objectives, this project presents a proposition of the procedure, intended to guide the latter creation of a standard procedure to be adopted by the different programs aiming to apply the Carry-over part's follow up methodology to achieve comparable results to those obtained for program Light.

Through the creation of such document to specify the activities and necessities for adopting the follow up methodology, it is intended to achieve its application into the different projects using Carry-over parts present in the company. This application is thought to be carried out accounting on the means already available, which is guaranteed by allocating the activities managed by the ASQ internship student to the other functions involved. By this, every one of the persons belonging to the project to which the procedure is intended to be applied will be empowered with the different activities needed to carry out the demanded tasks. These activities will have "specific responsibilities, measurable objectives and defined responsible" [5]

As mentioned before, in order to allocate the functions carried out by the ASQ internship student during the project's execution to the functions belonging to a project, the procedure's description of their roles include the allocated responsibilities into the description of every one of their functions.

See annex 2.



8. The project's sustainability (The usage of the Carry-over part follow up file after the intervention)

Due to the scope of this project, limited according to the time that from the beginning was planned to be dedicated to its execution, there are some activities that were not performed by the moment of turning it in; these activities concern the sustainability of the project in the enterprise in order to attain in others the results obtained for project Light.

8.1 The PSW follow up methodology applied into other projects (Plan)

With the intentions of achieving the same results as for project Light into other projects using carry-over parts, it is intended to work with the other programs managers in order to introduce the procedure created to their team and lead them into the adoption of the Carry-over follow up methodology.

The mentioned procedure will be presented to all the actors dedicated to a project in order to allocate the functions mentioned in this document and this way to carry out the application.

8.2 The project's activities allocation (Do)

As mentioned in step number 8, the construction of the procedure will include in every one of the different function belonging to a project, all the functions that were carried out by the ASQ internship student during the project's execution. In order to do this, a virtual share place is considered for all of them to be able to access and modify all the information contained in the file.

8.3 The project's activities execution follow up (Check)

As for every project, the quality on the performance of the activities executed has to be checked more cautiously at its beginning, because it is at this stage that its authors have to be motivated and engaged to pursue the expected results.

To carry out this follow up, a weekly meeting of every project's actors with the project's responsible ASQ is planned in order to answer questions and to check that the job done corresponds with the expected.

8.4 The project's execution assessment (Act)

This stage of the execution is conceived by the feedback that the projects' responsible ASQ gives to the projects' executers from their comments received in the weekly meeting, in order to answer the question concerning the methodology's application or just to guide them through the application of the procedure.



9. Conclusion

By the execution of this project there are two aspects I would like to conclude about separately:

The professional aspect concerning what was brought to program Light by the execution of the project:

- With the information retrieval carried out at the beginning of the project, which helped the indicator's status to improve notoriously and rapidly as shown on graph 6, it could be identified that the PPAP approval situation was not as bad as believed since this set of documents was already approved for 10% of them as evidenced on graph 6 with the fast climbing curve between the lines. This evidenced a lack of communication among the people concerned of receiving this information and the ones concerned of storing it and informing the project Light members about their reception.
- The first contribution mentioned on part "5.3.1 The identification of functions and function's needs and responsibility allocation" intended to improve the lack of communication among the different concerned function by well defining the responsibilities and then to allocate them to the different actors. This strategy would permit them to be aware of everyone else's responsibilities, which intends to create in every one of them a compromise with the tasks belonging to the allocated functions.
- Although the programs containing a non-approved reference remain the same amount from the project's re-start to the project's completion as evidenced with the comparison of graphs 4 and 9, the success of the project is justified by the fact that the number of references with no approval action or with an ongoing one decreased as shown when comparing graphs 5 and 10.
- The execution of the project permitted to diminish by 19% the number of non-approved references.
- Since only 17% of the references are not approved and 65% of the projects contain a non-approved reference, it can be inferred that many of the non-approved references are used by more than one project. This means that the approval of a certain number of these references would bring great benefits to the overall approval state found on the projects.
- My involvement with the suppliers and the different people composing Faurecia's staff permitted to establish an action plan for everyone of the non-approved references. This convergence plan will enable us to attain a rate of 100% compliancy by October 2012.



Personal gains with project execution:

- The opportunity of managing the amount of information concerning the project gave me the ability of organizing my way of thinking in order to transmit it into the way I started to organize the information in my hands, this way I started to be able to access this information in a more efficient and rapid way.
- The opportunity of working as a foreign internship student which limited me on the understanding the interaction in the work environment due to the language barrier, helped me to improve my capacity to understand frustration and to develop abilities to motivate my self when my capacities are exceeded by a situation or task.
- The need of developing a methodology by myself to carry-out this project obliged me to use the tools studied during the theoretical part of the “Master II Management Qualité” making it possible for me to put this tools to use in the professional field and adapt them to non-restrictive, ideal cases as those proposed in the academic environment.
- The fact of having to give result's about the work I performed while depending on others to achieve them, helped me to realize the importance of planning the activities on which rely my job in order to permit others to be also able to plan theirs, this way all the people involved would have enough time to supply demanded information or resources on time.



References

- [1] Group presentation, Faurecia, 2011 (18-05-2012)
- [2] SQ Supplier Quality Methodology guide, FAU-C-SPG-6400, Faurecia Automotive Group, 2008. (03-26-2012)
- [3] Production Part Approval Process, Daimler Chrysler Corporation, Ford Motor Company, General Motors Corporation, Third edition, 1999. (03-26-2012)
- [3] FARGES, Gilbert, Fondements méthodologiques de l'amélioration continue et de la résolution des problèmes, UTC, Master Management Qualité © 2011 (15-03-2011)
- [5] ISO/TS 16949:2002 IMPLEMENTATION GUIDE, Automotive Industry Action Group, 2003 (12-04-2012)
- [6] FERNANDES A. Mario (1996) El control, Fundamento de la gestión por procesos. ASIC 2003. 91 P. (03-04-2012)
- [7] KAPKIN S. Pedro, Convergence breakthrough for carry-over parts, MASTER Management de la Qualité (MQ), UTC, 2011-2012, <http://www.utc.fr/master-qualite>, puis "Travaux" "Qualité-Management", réf n°229)



ANNEXES



Annex 1. Carry-over follow up database

07/05/2012		Updated 03/05/2012										PPAP status Carry Over summary and New Program				
PROGR	Multi	Delivery plant	Supplier	Name	Refere nce	Ind	PPAP OLD	PPAP NEW	index PPA	Action	PILOT	Deadline				
FIAT 312US	N	Walbrzych	SFS	SPACER - CYLINDER UNITHREADED	4409096	9	SS0	approved	9	PSW OK	X	X				
FIAT 312US	N	Walbrzych	FPT	RECLIMER COMPONENT - PAWL ZK - DOUBLE SLOPE	4432730	12	SS0	approved	12	PSW OK	X	X				
FIAT 312US	N	Walbrzych	AMTEK	SUPPORT - ARRET DE GAINE APA MECA T7	4438436	4	SS0	approved	4	PSW OK	X	X				
A9 Lear	N	Grojec	LISI	SCREW - HEAD FLAT WITHOUT M8 CRIMPED CLASS 10.9	4439940	6	SS0	approved	6	PSW OK	X	X				
FIAT 312US	N	Walbrzych	SFS	CLIP - FIL DE BLOCAJE BELLETTE APA	4448236	3	SS0	approved	3	PSW OK	X	X				
A-Entry	N	Grojec	AMPECTM	Interface planche 5 mm	4451666	3	SS0	Approved	3	PSW OK	X	X				
FIAT 500	Y	US	MORA	BALL RETAINER - 2 BALLS	4457874	3	SS0	Approved	3	PSW OK	X	X				
L846	Y	Grojec	MORA	TRAIN DE CAGE AV	4457874	3	SS0	Approved	3	PSW OK	X	X				
FIAT 500	Y	US	MORA	BALL RETAINER - 3 BALLS	4457876	3	SS0	Approved	3	PSW OK	X	X				
L846	Y	Grojec	MORA	TRAIN DE CAGE AR	4457876	3	SS0	Approved	3	PSW OK	X	X				
S4403	N	Grojec	MEINSA	TRACK COMPONENT - MEMORY GUIDE PLATE	4462594	3	SS0	approved	3	PSW OK	X	X				
S4403	N	Grojec	MEINSA	TRACK COMPONENT - MEMORY GUIDE PLATE	4462595	3	SS0	approved	3	PSW OK	X	X				
V10	N	Grojec	ALTA GROUP	TRACK COMPONENT PLAQUETTE CALAGE V95	4462672	7	SS0	Approved	7	PSW OK	X	X				
V98	N	Grojec	ALTA GROUP	TRACK COMPONENT PLAQUETTE CALAGE V95	4462672	7	SS0	Approved	7	PSW OK	X	X				
X87	N	Grojec	ALTA GROUP	TRACK COMPONENT PLAQUETTE CALAGE V95	4462672	7	SS0	Approved	7	PSW OK	X	X				
B78	Y	Caligny	LISI	AXE	4464990	4	SS0	approved	4	PSW OK	X	X				
M3M4	Y	Caligny	LISI	AXE	4464990	4	SS0	approved	4	PSW OK	X	X				
T9 China	Y	Caligny	LISI	AXE	4464990	4	SS0	approved	4	PSW OK	X	X				
W62 SAO	Y	Caligny	LISI	SHAFT - DIA 0.0 mm	4464990	4	SS0	approved	4	PSW OK	X	X				
A9 SAO	Y	Caligny	LISI	SHAFT - DIA 0.0 mm	4464990	4	SS0	approved	4	PSW OK	X	X				
DRAGON	Y	Caligny	LISI	SHAFT - DIA 0.0 mm	4464990	4	SS0	approved	4	PSW OK	X	X				
B78	Y	Caligny	LISI	GEAR - DIA 29.7 mm.10 PIGNON 8 DENTS M 2.1	4465016	9	SE2	Interim Approved	9	Regis RAUX: ECR requested; decrease basis diameter in order to increase tolerance in assembly and achieve capability. Diameter is number one hierarchy so design office study needed. Derogation demanded until 30/06/2012.PSW and derogation present in Plan.	R Raux	30/06/12				



Annex 2. The Carry-over part follow up procedure proposed

faurecia

Carry-over management

FAU-XXG-24###/EN

PURPOSE

- The purpose of this file is to ensure approval for all carry-over pieces.

SCOPE

- All projects containing carry-over pieces.

RELATED DOCUMENTS

Issue	Date	Description of changes	Cancel or replaces
1	02 Jun 2012		FAU-XXG-24###/EN

Author	P. Kapkin, ASQ internship student
Verified by	
Owner	
Approved by	



Annex 2. The Carry-over part follow up procedure proposal



Task Timing:

- All references must be approved after Gate Review number three of the project they belong to.

Task Description : Add to file all references used by the program, register its approval status. In case the reference is interim approved or not approved start set action plan for its approval.

Customer for Deliverables: Supplier Quality (ASQ) and (SQA)

Inputs:

Bill Of Materials (BOM)
Part Submission Warrant
Bill Of Materials + Supplier names
Technical assistance

Source of input

Program Manufacturing Leader (PML)
Supplier Quality Assurance (SQA)
Program buyer
Design office

Resources: PML, SQA, Program buyer, Design office

Methodology:

N°	ACTIVITY	DESCRIPTION	RECORDS
1		The team leader receives project and assigns responsibilities to the team members.	Standard BOM form
2		The PML determines the different pieces and its volumes required by the project along with the delivery site. From the different references listed on the BOM as needed by the PML, the program buyer contacts suppliers for contracts allocation.	
2		The project's responsible ASQ includes references needed in new project into the carry-over follow up file.	Individual reference action plan spreadsheet
5		The project's responsible ASQ checks if the references included in file have already been used and are approved otherwise he notifies SQAs in order for them to start approval process.	
3		The SQA responsible for the contact with the non-approved reference's supplier creates an action plan for the reference's approval.	
4		Continuous follow up of approval process by SQA responsible. Depending on the type of issue the SQA can contact the Design office for support.	Individual reference action plan spreadsheet



Annex 2. The Carry-over part follow up procedure proposal

Supplier Partnership



N°	ACTIVITY	DESCRIPTION	RECORDS
	<pre> graph TD A[A] --> B{Was reference approved?} B -- NON --> C((4)) B -- YES --> D[Obtain signed PSW and save it] D --> E([FIN]) </pre>	<p>SQA responsible for reference's approval transmits approved PSW to project's responsible ASQ for him to save it.</p>	<p>PSW storage file</p>
4			
5			



