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THE RENAULT MANAGEMENT OF SOLVING PROBLEMS REPORTED BY THE COSTUMERS

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ABSTRACT

This document presents the interest, the determination and the performance of Renault to solve, in a short time and efficiently, the technical problems claimed by the costumer, in the vehicle warranty period. Therefore, is can be found here which are the sources, the tools, the Renault strategy and how every problem are managed since it's appears in the Renault system, claimed by costumer, until it's solved.

KEYWORDS: Renault, costumers, claims, technical problems, solutions**,** solve.

1. INTRODUCTION

For solving problems reported by the costumer, using Renault internal sources, during the vehicle warrantee or "in serial life", Renault has an internal strategy, well-defined and applied which offers the opportunity to solve them, to avoid in the next projects the same technical defects and to improve the vehicles.

For solving quality problem, Renault has define 3 phases, each phase have other important steps (9 steps in total), which provides/ensures the elimination of problems and it helps to understand which are causes who has determinate the problem, who is responsible to solve it, how can it be solved and how can the applied solution be useful in the future.

Therefore, these phases are:

Table1: Detail Renault schema of solving problems

Phase 1:	DETECTION AND DOCUMENTATION
Step 1:	Detection of the subject that will be treated.
Step 2:	Explain why chosen.
Step 3:	Documenting and understanding the problem to affect it to the responsible group.
Phase 2:	PROCESSING AND FEEDBACK TO THE NETWORK
Step 4:	Choose the targets resolution
Step 5:	Analyze the causes
Step 6:	Implementation of the corrective measures
Step 7:	Confirmation of the effects and conditions of closing problem
Phase 3:	CAPITALIZATION
Step 8:	Standardization
Step 9:	Synthesizing and planning the futures actions

Following, first of all, will present the most important sources and tools used for visibility on the problems, and will continue to develop and explain what presume each step from these 3 phases, how they are applied in relation with the seriousness and importance of the problem, and who are the principal actors concerned in the resolution of problem.

2. SOURCES

By "sources", we mean how the costumer's claims or the problems arrive in the Renault internal

system to be solved. There are many ways to account records regarding the costumer's claims or the problems appeared in the vehicle warrantee. Of these, the most important are:

✓ Documents which are drawn between the Service and the Incidentology Department, after the costumer claimed the incident, such as *FIC* (Fiche Incident Client), *Information Technique*, *NT* (Note Technique). These have a high interest and are the most important.

✓ **E‰ / V‰** (ESTEL / Van Quality Survey): Numbers of costumer claims reduced to 1000 vehicle. These claims are expresses, monthly, during telephonically investigations, considering the vehicles until 3 month of turnover (between 2,5 and 3,5). These have a medium importance, but they give some very important information.

✓ **S‰** (SOFFRES): Numbers of costumer claims reduced to 1000 vehicle. These claims are expresses, annual, during courier's investigations. These have the lower level, because the costumer is not always interested to complete the formularies.

There are other sources also which cannot be present because they have a very high level of confidentiality.

3. TOOLS

For detecting, rating and manage the problems there are used some usual "tools" such as:

➢ **PDCA Cycle**: using the 9 steps presented above, we can consider:

PLAN: steps 1, 2, 3 and 4.
DO: steps 5 and 6.
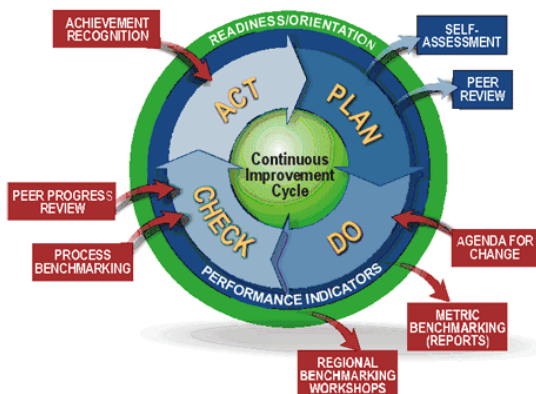*CHECK:* step 7.
ACT: step 8 and 9.

Fig.1. PDCA Cycle

➢ **PARETO Chart**: It helps to manage the problem during the solving period and after the application of the solution.
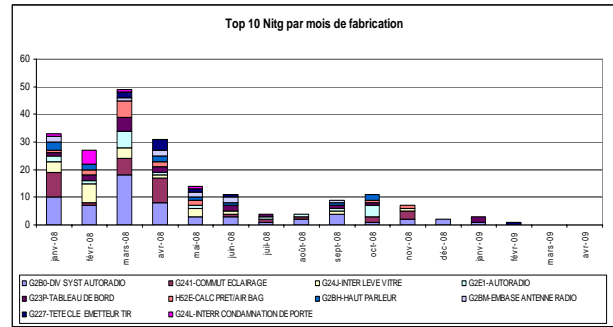

Fig.2. Example of Pareto Chart used by Renault

➢ **ISHIKAWA Diagram**: It helps to understand witch causes has determinate the problem.
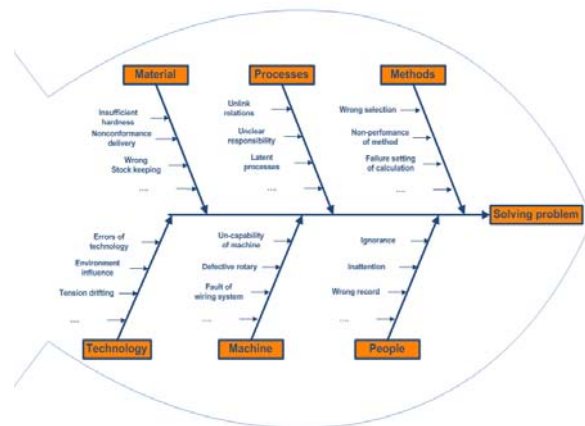

Fig.3. Ishikawa diagram

4. SOLVING PROBLEMS PROCEDURE

As it has been present in introduction, Renault has an internal strategy well defined that contains 3 phases applied in nine steps as follows:

PHASE 1: **Detection and documentation**

The principal objectives of this phase are:

• Quickly detection of the new incidents or cases of recurrence after application of a solution;

• Piloting the lookouts for survey the quality situation of Renault products on the market;

• Investigating of the incidents, documenting them with maximum of information necessary for being solved;

• Hierarchy of the incidents for identify their impact in costumer and classify them for treatment;

• Identifying the type of defects by making a technical pre-analysis on the broke vehicle;

• Affect the incident to the responsible plant or study office, function of the defect, for being treating.

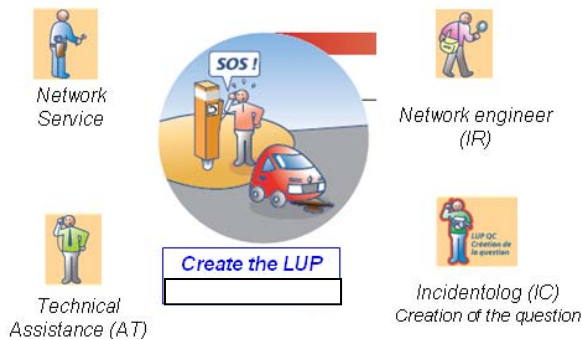**Step 1**: *Detection and determination of the subject that will be treated.*

Fig.4. Details schema of step 1

The Costumer: is calling to the Service for claiming an incident with his car.

Network Service:
- Detects the incidents, find / make the problem diagnosis and reproduce the defect;
- Repairs the vehicle;
- Documents the warrantee base;
- Communicate with the "Techline".

Technical Assistance/Techline:
- Help the "cotech" in his diagnosis;
- Inform the Incidentology Department about the incident,
- Request A2M (Assistance world alert) or ADD (Assistance diagnosis and documentation) if assistance level two is justified (FIC).

Network Engineer/ OPR (Network operation pilot):
- Detects the incidents in real time;
- Pre-diagnosis the incidents;
- Prepare the technical alerts;
- Collect the parts and/or block the vehicle for analysis.

Network Engineer/ IR (Network engineer):
- Inform the Incidentolog / trades about the new incident, the inefficient solutions and the difficulties of diagnosis;
- Realise and/or piloting the conformity analysis (Level 1).

The Incidentolog:
- Detects the incidents;
- Take into account the alerts from trades/plants;
- Establish the criticism level;
- Create the LUP QC (LUP- Unique List of Problems; QC- Quality) question.

Step 2: *Explain why chosen*

Network Engineer/ OPR (Network operation pilot):
- Contribute to lift the necessary supports;
- Realise some pre-analysis.

The Incidentolog:
- Takes into account soon as possible the incidents;

- Realise the technical histories of the vehicle;
- Made or caused a pre-analyse for identifying the failure mode;
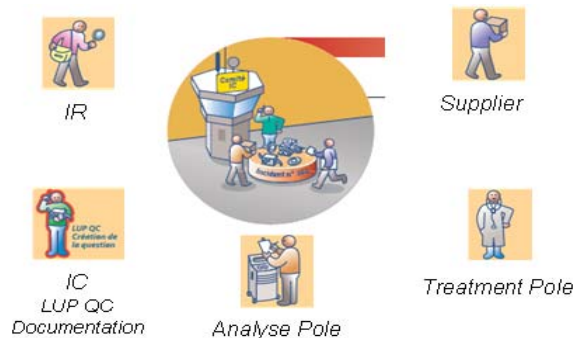- Collect the maximum of information for documenting the LUP QC question.

Fig.5. Details schema of step 2

Analyse Pole/Analysts:
- Its formed by analysts from the Incidentology Department, Engineers, Plant, Supplier;
- Realise and/or pilot the pre-analysis requested function of the subject necessity.

Treatment Pole/ trades - plant: Intervene in "amont", for more information.

Step 3: *Documenting and understanding the problem to affect it to the responsible group*
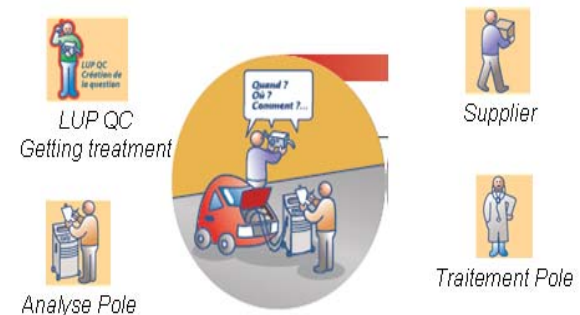

Fig.6. Details schema of step 3

Analyse Pole/Analysts:
- Continues the pre-analyze to determine the failure mode, requested by the Incidentolog or by the Treatment Pole;

The Incidentolog:
- Provide supports incriminates;
- Identify the failure mode;
- Affect and put in treatment the LUP QC question.

Treatment Pole / Quality Animator: Names the pilot for the LUP QC question (if it is not himself the pilot).

PHASE 2: **Processing and feedback to the network**
   The principal objectives of this phase are:

• Appropriating the subject and collecting the complement of information around the subject (supplier information, last modifications, factory exit situation or plant retouch…);

• Establish the client protection in plant and in "After-sales" (after-sales) for stopping the bleeding;

• Analyse in full the subject;

• Search the serial and "After-sales" solutions (provisory and definitive), validate their reliability and applying the availability of the parts in "After-sales";

• Develop if necessary an OTS (Operation Technique Speciale);

• Diffuse in a short time the "After-sales" solution and send the technical information in the network to make available the means necessary to repair.

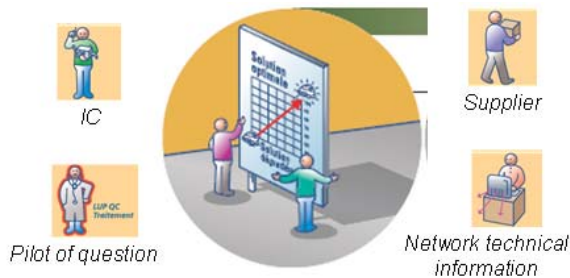**Step 4**: *Choose the targets resolution*

Fig.7. Details schema of step 4

LUP QC Pilot:
- Appropriates the subject;
- Constitutes the team to treat the question;
- Choose the indicator to measure the treatment efficiency;
- Define the solving problem schedule.

Treatment Pole / Quality Animator:
- Check the progress of treatment;
- Facilitate the work LUP QC Pilot.

The Incidentolog: Assist the LUP QC Pilot.

Network technical information: Get acquainted of the files.

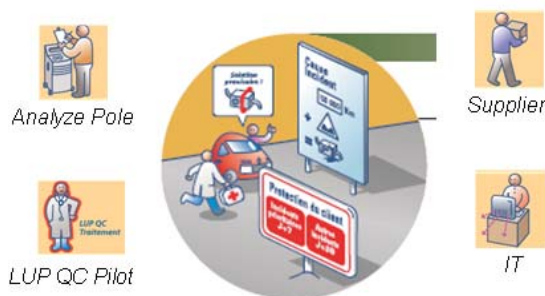**Step 5**: *Analyze the causes*

Fig.8. Details schema of step 5

Analyse Pole/Analysts:
- Create or use a "failure tree"
- Identify and hierarchy the failures modes and the root causes.
- Confirm the failure causes.

LUP QC Pilot:
- Define and request the establishment of the "After-sales" and serial provisory solutions.
- Mobilise the analysis sectors concerned;
- Trace the actions plans in the LUP QC.

Treatment Pole / Quality Animator: ensures about the speed of the treatment progress.

Network technical information:
- Validate the reliability of the solution provisory "After-sales";
- Diffuse the information in the network.

Treatment Pole / trades: verify, alerts if the risks exist on the other vehicles too.

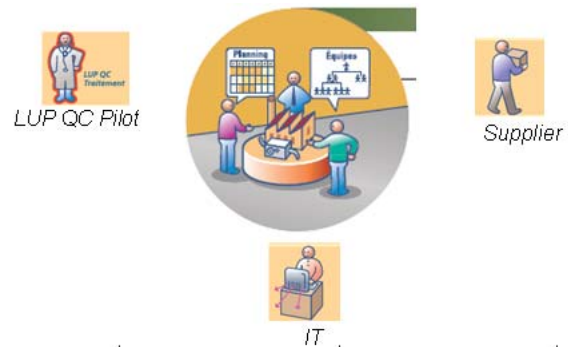**Step 6**: *Implementation of the correctives measures*

Fig.9. Details schema of step 6

Network technical information:
- create and diffuse the information in the network;
- communicate the plan for availability of the parts;
- Define in the LUP QC an provisionally date for application of the definitive "After-sales" solution.

LUP QC Pilot:
- Define and schedule the definitive corrective actions;
- ""After-sales" " realise a specification for the technical solution of repartition;
- Serial: Identify a serial solution with a fixed schedule;
- Ensures that the solution was validated, develop a Validation Plan associate and fallows the application of the definitive solution.

Supplier: involved, fallows, propose the ensemble of actions plan defined by Renault.

Treatment Pole / Quality Animator:
- Fallows the ensemble of actions plan defined by the LUP QC Pilot;
- Ensure about the actions plan progress.
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Step 7: *Confirmation of the effects and conditions of closing problem*

Fig.10. Details schema of step 7

LUP QC Pilot:
- Estimate the efficiency rate of the solution;
- Realise the check-list for closing the LUP QC;
- Close the LUP QC question in according with the Incidentolog.

The Incidentolog: Approves the LUP QC question closure.

PHASE 3: **Capitalization**
- Audits and verify the solutions implemented;
- Verify that the incidents falls in costumers;
- Update and applies the trades standards and the conception rules;
- Reports on the process functionality of solving the problem and improve.

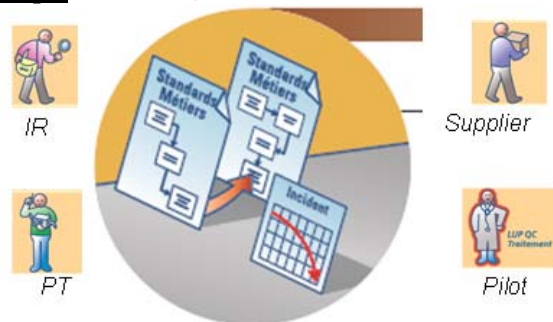**Step 8**: *Standardization*

Fig.11. Details schema of step 8

Treatment Pole / trades: update the conception standards.
LUP QC Pilot: verify and audits the implemented solutions.
Analyse Pole/Analysts: participate to the capitalization.
Treatment Pole / Quality Animator: fact initiates capitalization.
The Incidentolog:
- Verify that the incidents falls in costumers;
- "Stalks" cases after-frontiers.

Network Engineer/ OPR (Network operation pilot):
- Verify the efficiency of the solution;
- Stalk cases after-frontiers.

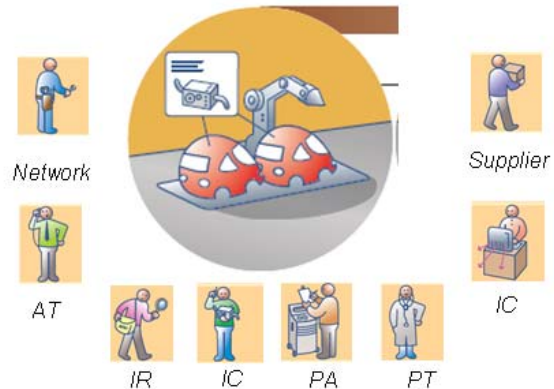**Step 9**: *Synthesizing and planning the futures actions*

Fig.12. Details schema of step 9

The Incidentolog:
- Reports on its functionality;
- Ensures a control role;
- Improve the process.
Treatment Pole / Quality Animator:
- Reports on its functionality;
- Verify that the check-list expected to the millstones are OK;
- Improve the process;
- It is the guarantor of the process.
Treatment Pole / trades:
- Reports on its functionality;
- Improve the process;
- Updates and applies the trade standards and the conceptions rules.

5. CONCLUSIONS

Quality is always a concern and priority in the group Renault

Standard methods are use to detect and survey the quality problems, such as cycle PDCA, PARETO Chart, ISHIKAWA diagram.

Renault utilize an very formalized and monitored process in treatment progress of the impacted subjects, in an organization and human resources dedicated to improve and maintain the quality level of vehicles fallowing the costumer satisfaction.

Important is also the fact that in RENAULT Group it's working in "transversal", meaning in a big diversity of nationalities because of spreads, necessities and requests of RENAULT marks on the market all over the world, fact which can generate many difficulties in maintaining the quality. With all these RENAULT, succeed to maintain and to raise the quality level of their vehicles.

6. REFERENCES

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