

BUSINESS INTELLIGENCE MANAGEMENT REPORT USING RAPIDO LOG DATA

BACHELOR THESIS

6/10/2013

DAF Trucks N.V.

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Graduation Project Report

Business Intelligence Management Report Using RAPIDO Log Data

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Performed at

DAF Trucks N.V.

Eindhoven,

the Netherlands

February 2013 – June 2013

Company Supervisor:

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Bachelor Information and Communication Technology & Business Program

School Supervisor: Ad Maas

Date Submitted: June 10th 2013



GRADUATION PROJECT REPORT

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DEPARTMENT OF INFORMATION TECHNOLOGY

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Title of Report : Business Intelligence Management Report Using RAPIDO Log Data
Date of Issue : June 10th 2013
Print Date : June 10th 2013

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PREFACE

This report is a management report documentation of a graduation project internship which is carried out from February 2013 to June 2013 at DAF Trucks N.V, a trucks manufacturing company located in Eindhoven, the Netherlands. It is written to complete the requirement for finishing my study as a Bachelor Degree in the Information and Communication Technology department at Fontys University of Applied Sciences.

The main title of the project is “Business Intelligence Management Report Using RAPIDO Log Data”. The assignment of the project is to create management reports for Parts and Service RAPIDO effectiveness and efficiency. It is done by building a business intelligence information dashboard for reporting the system effectiveness and efficiency to the manager of Technical Information, Training and Diagnostics of After Sales Department at DAF Trucks N.V.

The project is done under helping supervision of Guus Claes as company supervisor and Ad Maas as the school supervisor. To both of them, I would like to present my special thanks for giving me support, drive, and suggestions to complete the project successfully. I also would like to give thanks to Joeri van Goudoever for assistance in obtaining all requirements regarding the RAPIDO database system.

At last I also would like to express my thanks to all my colleagues as part of my project team, Coos Edzes, Romboud Siegmund, Wilfried Bijnen, Huub van den Berg, Max Skrivanek, Mike van Nunen, Kristof Smets and Mark van Beek for their valuable cooperation, help and suggestions during the period of internship. I also would like to give thanks to Ronnie van Wijgerden for assistance in guiding the build of the Microsoft Access application.

I will not forget the experiences I had at DAF Trucks N.V.!

Muhammad Rinaldi Darmawan

Eindhoven, June 2013

ABSTRACT

This document will describe the activities, progresses and results of the internship at DAF Trucks N.V, After Sales Department. This internship was for the graduation project to complete the bachelor study of the intern. The project was carried out by Muhammad Rinaldi Darmawan, an ICT & Business student from Fontys University of Applied Science, Eindhoven.

The After Sales Department of DAF Trucks N.V. has a web-based application for their dealers called RAPIDO. The application is divided into two sections, Parts RAPIDO and Service RAPIDO. Parts RAPIDO is a DAF's electronic spare parts catalogue, where the dealers can search for trucks spare parts. Service RAPIDO is an application that support the service technician with vehicle-specific service information. People at DAF After Sales Department always update the contents of Parts and Service RAPIDO. Since a few months ago, they have the possibility to collect and measure all actions users carry out in Parts and Service RAPIDO.

However, the main goal of this project is to provide a management report based on stored RAPIDO log data for the DAF After Sales Department. From this management report, DAF After Sales wants to see the effectiveness of the application. Based on that, it might be helpful for them to take some decisions for the future project related Parts and Service RAPIDO.

To keep the project in the right order and right track, the project management method chosen an incremented phasing approach. The project was divided into 3 increments in 5 phases. First phase was the initiative phase. The main point for this phase was about to learn first about RAPIDO, how the application works. Next was to investigate and analyze the stored RAPIDO log data. The outputs from this phase were a project plan and a project charter which contain the details of the project. Next phase was the design and definition phase. In this phase, the main point was to collect requirements from internal people who were involved in the project. The requirements analysis document was made to show the requirements for this project. The first and second phase were in the first increment. The third phase was realization phase. The phase covered the design and implementation of database and programming a simple user friendly application in Microsoft Access. This phase was done in each increment. The realization phase was in second increment. The last increment covered transfer phase and after-care phase. In both phases, the main point was to hand over the application and user manual to the company, and also gave some tutorials on how to use the application and how to maintain it.

The project was successfully completed. The knowledge and experiences were obtained during the process of the project. It was not only an educational experience, but also useful for understanding the organizational culture and improving my soft skills, such as communication skills and project management.

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GLOSSARY

PR	Parts RAPIDO
SR	Service RAPIDO
PV	Parts Viewer
TI	Technical Information
TRP	Truck & Trailer Parts
SXP	ServiceXpert
VBA	Visual Basic for Applications (Microsoft)
CSV	Comma Separated Values

INTRODUCTION

This report will describe all activities, processes and final result of doing internship at DAF Trucks N.V. The project is to provide a management report based on stored RAPIDO log data. RAPIDO is the name of the application that DAF uses. This application is used to provide the DAF dealers of trucks spare parts catalogue and service information for the technician.

The main goal of the project is to provide a management report that contains requirements from the company. Not all requirements can be completed; it depends on the data availability in RAPIDO log data. The task consisted of medium programming in Microsoft Access and also creating project management documents.

Chapter 1 contains the general impressions of the company and its structure.

In the Chapter 2 the details of the assignment, the objective for the company and the initial situation of the current application are explained.

Chapter 3 explains the approaching method to complete the project and which techniques were used.

Chapter 4 explains the management reporting based on stored RAPIDO log data, the functionalities that meet the requirements and also the user interface for the simple application in Microsoft Access.

Chapter 5 contains the results that the intern got and produced during having an internship at DAF Trucks N.V.

Chapter 6 describes the conclusion on doing this assignment and giving some recommendations to the company.

Chapter 7 contains the evaluation for the intern during working at DAF for this project.

At the end of the report, there are some Appendix documents which are made during the project and also as a result of the project. These documents are:

- Project Plan
This document is to explain the details of the project.
- Project Charter
This document is a template document from DAF for project initiation. It is quite same as project plan document.
- Requirement Analysis Document
A document which contains collected requirements from all internal people in DAF After Sales Department who are involved in the project.

1. THE COMPANY

1.1 History of DAF Trucks N.V.

DAF was founded by Hubert “Hub” van Doorne and Win van Doorne in 1928. They named the company as Commanditaire Vennotschap Hub van Doorne’s Machinefabriek. They got Huenges as the investor and also as the co-founder. Huenges was a managing director of a brewery.



Figure 1-1 Hub and Wim van Doorne

In 1932 the company name changed to Van Doorne’s Aanhangwagen Fabriek (Van Doorne’s Trailer Factory), abbreviated to DAF. They started to produce trailers. In 1936 Huenges left the company and DAF was completely steered by the van Doorne brothers.



Figure 1-2 DAF Logo in 1948

After the Second World War, lorries and luxury cars were very scarce, so in 1949 the company started making lorries, buses, and trailers. Same in that period, the company name was changed again to Van Doorne’s Automobielen Fabriek (Van Doorne’s Automobile Factory). The first model of lorry was the DAF A30. A year after that, a truck factory was built and it was the starting point of the chassis production for three, five and six ton trucks. The rate of production went up from

ten trucks a week to twelve trucks a week.

In the winter of 1954 Hub van Doorne got the idea to use the belt drive, to drive road vehicles as many of the machines in the factory were belt-driven. DAF produced its first draft of a car belt drive system, and then over a few years the draft design was developed and refined. In the February 1958 DAF gave the demonstration of a small belt driven four seated car at the Dutch car show (the AutoRAI). The public reaction was positive and 4.000 cars were ordered. DAF began production of passenger cars in 1958. In total, more than 800.000 DAF passenger cars with the famous Variomatic propulsion system would be constructed.

In 1976 Volvo took over all passenger car development and production activities from DAF and DAF only focused on developing and manufacturing trucks, buses and company cars. The disaster for DAF came. In 1993 the market of company cars collapsed and DAF went bankrupt. However, a new company, DAF Trucks N.V., appeared in the Netherlands as a result of a management buy-out of the Dutch operations, as did Leyland Trucks and LDV in the UK.



PACCAR acquired DAF Trucks in 1996. PACCAR is one of the global technology leaders in design, manufacturing and customer support of trucks in the world and manufactures famous truck brands like Kenworth and Peterbilt (*Source:*

Figure 1-3 DAF Logo Since 1993 Until
Now

www.daf.com).

DAF Trucks' core activities are focused on the development, production, marketing and sale of medium and heavy-duty commercial vehicles. DAF also focuses on the marketing and sale of light trucks manufactured by Leyland Trucks Ltd. in the UK, which is likewise a wholly owned subsidiary of PACCAR Inc. All DAF and Leyland products are fully backed up by a full range of services. Another activity for DAF Trucks is producing components for third parties, ranging from axle assemblies to complete engines for buses and coaches and special vehicles.

DAF works with a 'Build to Order' principle. This means that all vehicles are built to satisfy each customer's individual wishes, but production only starts after the order is received from the customer. This point is very important, because DAF builds tens of thousands of different truck versions each specifically tailored to the needs of every customer or transportation requirement. The customer is DAF's priority. DAF's products must have all these characteristics. These are low costs per kilometer, high quality, driver comfort, low fuel consumption, minimal impact on the environment and high transport efficiency.

DAF Trucks has production facilities in Eindhoven, the Netherlands and in Westerlo in Belgium. DAF's headquarters, engine factory, component plant, press shop and final assembly line for CF and XF models are completely located in Eindhoven, the Netherlands. In Westerlo, Belgium the axles and cabins are produced. Leyland Trucks (PACCAR Company) in the UK produces the company's LF series of light and medium duty trucks, as well as CF and XF105 vehicles.

DAF has expanded its industry leadership since 2011 as a result of superior quality, innovative products and class-leading customer support. There are three basic truck models that DAF produces. The first one is the LF series. The LF is the smallest version and is specially designed to distribute cargo in the city with high traffic density. The second is the CF series. The CF is a multifunctional truck model and is specially designed to do all kinds of work like tank transport, bulk or just regular distribution. The last one is the XF series. The XF is the largest truck model and is designed for international transportation. The XF series has extras like a bed and television to make longer trips possible and more comfortable for the driver.



Figure 1-4 Three Basic Truck Model of DAF

1.2 After Sales Department

This figure below shows the organization of DAF After Sales Department.

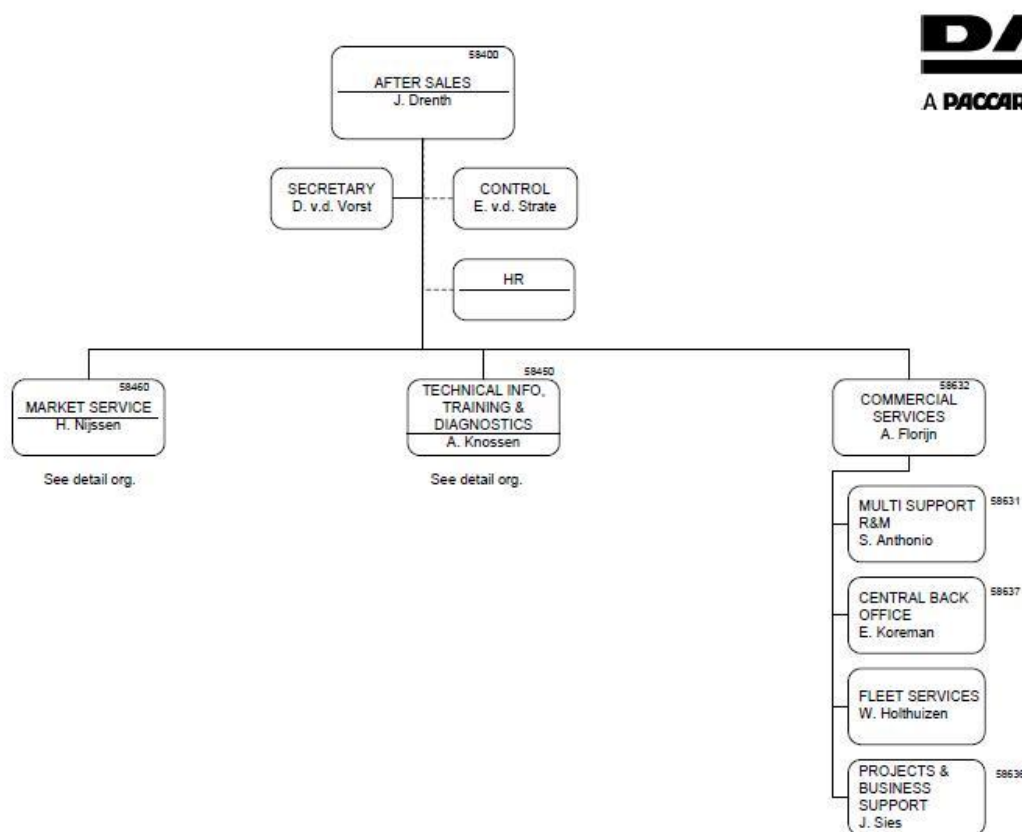


Figure 1-5 Organization Structure of DAF After Sales Department

Under DAF After Sales Department, there are 3 divisions. There are Market Service; Technical Information, Training & Diagnostics; and Commercial Services. The intern was working in Technical Information, Training & Diagnostics division.

Figure 1-6 shows the detailed organization structure for Technical Information, Training & Diagnostics division.

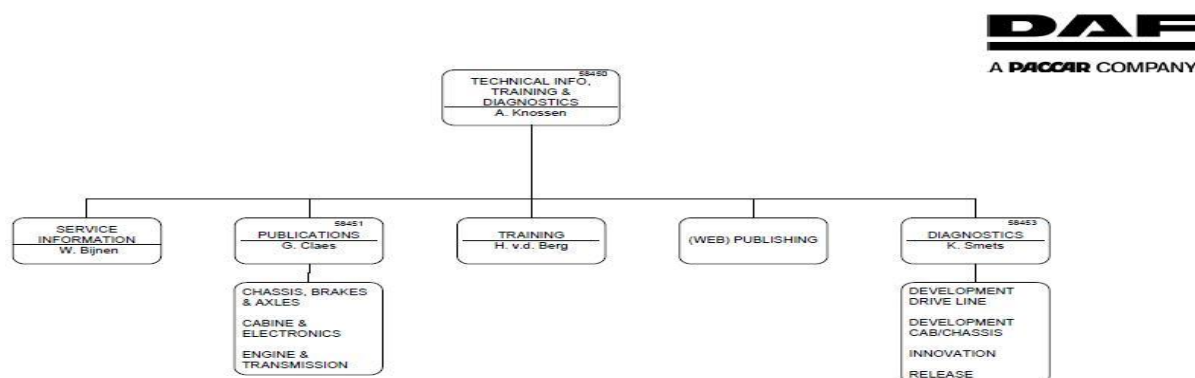


Figure 1-6 Organization Structure of Technical Information, Training & Diagnostics Division

1.3 Project Organization

This section will describe the project organization structure. Three roles have been defined:

- 1) Company Supervisor: Will be responsible for guiding the intern to carry out the project and will be responsible for quality of the final product delivered by the intern. The Company Supervisor has authority to commit resources on behalf of the company.
- 2) School Supervisor: Will be responsible to ensure the intern is still working on the right track and delivers management report as written in the project plan.
- 3) Intern: Has the responsibility and authority to carry out the project by a day-to-day basis with supporting of Company Supervisor and School Supervisor.

The Company DAF Trucks N.V

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2. THE ASSIGNMENT

This chapter will describe the situation that is related with the assignment. It contains the initial situation, description of the assignment and the objectives of the assignment.

2.1 The Initial Situation

DAF Trucks Eindhoven has a department called After Sales Department. This department's responsibility is to provide all information that is important for the customer and dealer after the truck is sold. It could be the spare parts or service information that describes how to repair the trucks and so on. They have a system or application to provide all information about trucks spare parts and service information for DAF Dealers. The application is called RAPIDO.

Parts and Service RAPIDO is a web-based application for spare parts and service information system of commercial vehicle manufacturer DAF Trucks N.V. in Eindhoven, the Netherlands. The system has been developed and continuously extended by ServiceXpert throughout 15 years of collaboration with the Dutch commercial vehicle manufacturer.



Figure 2-1 DAF Portal Home Page

The system consists of 2 components, which provide daily updated automated after-sales information. The components are:

- Parts RAPIDO
It is DAF's electronic spare parts catalogue, where spare parts and special tools can be searched and put into the shopping list.

DAF
A PACCAR COMPANY

Language Settings: English

Parts Rapido 3.1.1

Chassis No: 0E950000
Regist Number:
Vehicle type: XF105-FT XF105

Search Results

Vehicle Identification Data	
001	Chassis number 0E950000
080	VIN number XLRTE47MS0E950000
103	Series XF105
104	Vehicle type FT XF105
119	Type code G0509A
162	Market Group BINNAC0
217	Date/time password ECU 2013-04-18 09:26:30
117	Delivery address BTS GMBH
120	Specification week 201213

General Vehicle Data	
126	Engine power MV340KW
160	Basic engine execution BMOT.NM
165	Id Card Status D
121	Steering LHD
123	Cabin version SPACEXH
124	Wheel base VVB380
122	Exhaust emission EURO-5
125	Wheelplan & type 4X2E
102	Sales-ordernumber 046341
147	Countrycode 004
051	Transport number R3427
159	Type FT
127	Conlant STD KI M

Serial	Ecu
010	Volume fuel tank: 850+430
114	Version 01
128	Rear overhang (AE) AE 0.99
216	Color code chassis C4P500GRY
0200	Unit dat standard
129	1st front axle type 152N
156	Front spring type PARBVVR
0300	Ecu data drive line
008	Rear axle 1 number 2FN333
132	Rear axle type AAS1347
133	Rear axle ratio 2.69
134	Differential lock MECBLAA
155	Rear spring type LUVACHT
0400	Ecu data ch / cab
002	Engine number A109197
137	Engine type MX
163	Service Interval OVT.STD
0500	El. inst., variants
004	Gear box number 00721500
140	Gearbox type 12S2300
0550	
054	Steering wheel lock nr C1NC03NMFR
0600	Param. mode to V40

Figure 2-2 Parts RAPIDO Home Page

- Service RAPIDO
It supports the service technician with vehicle-specific service information.

DAF
A PACCAR COMPANY

Language Settings: English

Service Country: The Netherlands

Service Rapido 3.1.1

Chassis No: 0E950000
Regist Number:
Vehicle type: XF105-FT XF105

Search Results

perform basic X service

- check air pressure (Instrument panel)
- open grille (Grille)
- check level reservoir, clutch fluid (Clutch control, cab)
- check air leakage (Air suppl brake syst)
- check damage air suspension bellows
- lift all air suspension bellows
- check air suspension bellows (Suspens. driven axle)
- lower all air suspension bellows
- remove battery box cover (Battery box)
- check earth connections (Electr. system, cab)
- disconnect battery clamp, negative pole
- check (Battery)
- clean battery terminals (Battery)
- check/fill level battery, wet, 12 volt (Battery)
- install battery box cover (Battery box)
- tilt cabin
- check cabin
- set cabin tilting pump (Tilting mech., cab)
- apply cabin tilting pump (Tilting mech., cab)
- check basic X service front axle beam (Axle beam, fr. ax)
- check shock absorber, axle suspension (Shock abs.)
- check damage ball joint (Track rod fr. axle 1)
- check damage ball joint (Steering box)
- check attachment anti-roll bar (Stabil. front axle 1)

Job title: perform basic X service

Job code: E 0000 000000 048 503

Time: 02:03 hh:mm
02:05 hours

Released: 22/02/2013 dd/mm/yy

Failure Location Code:

NA Labor Operation Code:

Job ID - 16041

Figure 2-3 Service RAPIDO Home Page

The newest version is RAPIDO 3.0. It was rolled out in June 2010 for PACCAR Parts in North America and the DAF Trucks N.V. headquarters in Eindhoven. Since August 2010 the RAPIDO 3.0 roll out by DAF Trucks N.V. continued successively for German speaking markets in Germany, Austria and Switzerland. Great Britain, the Benelux countries, Poland, Czech Republic, Hungary, Spain and Portugal as well as Italy and France followed at the end of November 2010.

Both RAPIDO applications have 5 sections in their home screen. There are application header, Q1, Q2, Q3, and Q4. Figure 2-4 shows each section and also the name.

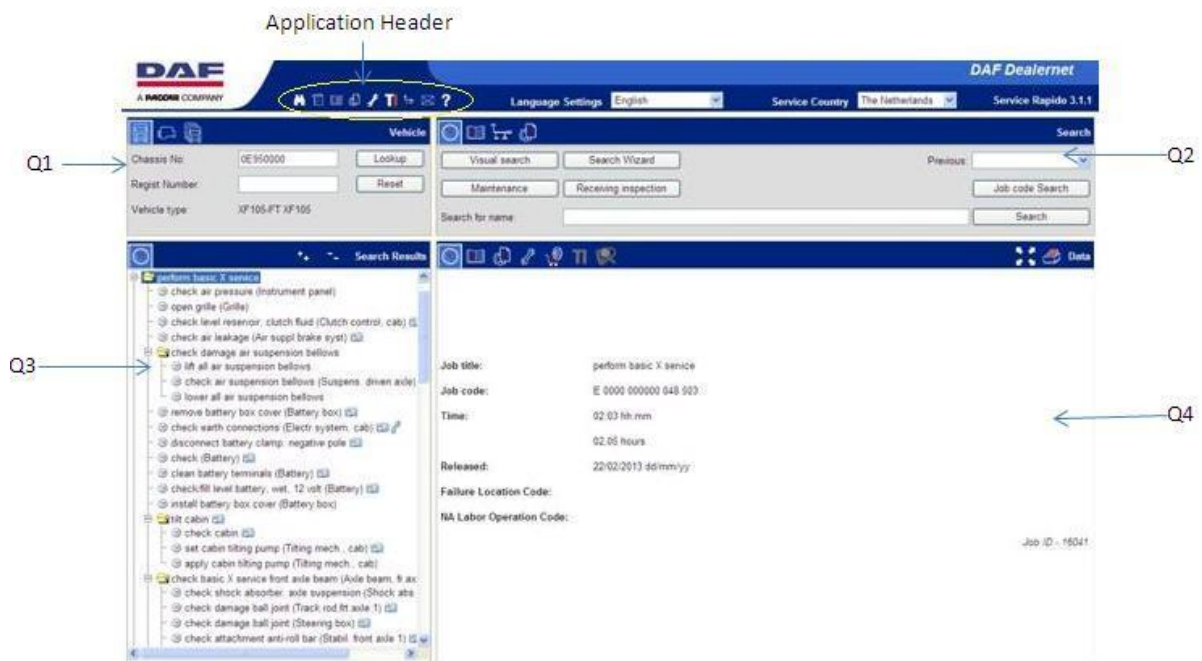


Figure 2-4 Five Sections in RAPIDO Application

2.2 Introduction to Logged Functions in RAPIDO

This section will describe the logged functions which are already implemented by the DAF After Sales Department. It is used to measure all actions out of Parts and Service RAPIDO, to collect and manage all the information regarding the usage of the application.

2.2.1 General Logging Mechanism

This is the basic information which must be in the log-entry. It includes the information for the users who are accessing the system. This information is about:

- An ID, it is used to identify which operation number for each session
- Session-ID, it is used as an unique identification of the user
- A Time-Stamp, indicating the date and time, that the operation occurred (server-side)
- An indicator for which application the user is accessing (SR or PR)
- IP address for each user

That all information is done by the following syntax:

```
<log id="1" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context>...
  </context>
</log>
```

Figure 2-5 General Logging Mechanism Syntax

2.2.2 The Context Tag

The context tag is used to identify each operation of the users. It means for example that if the user wants to search for a job, it must include the information used for the lookup (chassis-number, vehicle series, etc.). It is done by the following syntax:

```
<context function=<function-name> param=<function-param1> value=<function-value1> />
<context function=<function-name> param=<function-param2> value=<function-value2> />
...
```

Figure 2-6 The Context Tag Syntax

2.2.3 Service RAPIDO

From the picture below, it describes general logged functions in Service RAPIDO application.

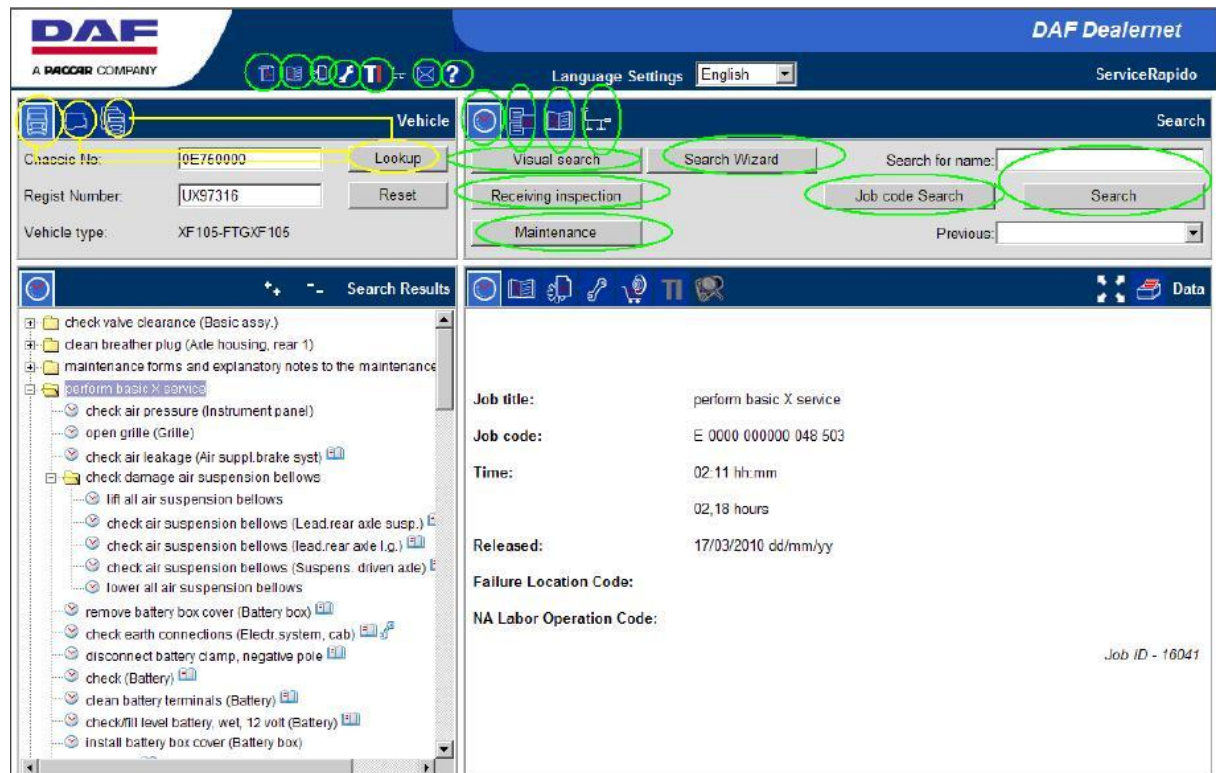


Figure 2-7 General Logging Functions Service RAPIDO

2.2.3.1 SR Application Header

This part is in the top of the application header. By clicking on the application header buttons, it will be saved in the log-entries.

Figure 2-8 SR Application Header

These are for the following buttons which will be added to indicate what button was clicked:

- Search Special Tools
- Comments
- Help

The “Search Documentation (PDF)” button will log only when the “view” button is clicked (in the pop-up window) and will log the various selected parameters that were used for the query. The “Regulations, Instructions, Manuals” button will log the selected modules in that function. The last one for the “Tis” button, the module that is opened will be logged.

The list below is the context tag which will contain the following values for SR Application Header.

Function-name	Function-Param	Function-value
SRAppHeader	openWindow	specialTools comments help pdfDocumentation RegInsMan TechnicalData RapidoMessage
pdfDocumentationSearch	searchMode vehicleSeries documentationType title language componentGroup	VehicleSeries DriverDocumentation ComponentGroup CF65 (e.g.) Maintenance (e.g.) Safety and main (e.g.) English (e.g.) 2 (Engine) (e.g.)
tiGenericSearch	open	PUB00639 (e.g.)

Table 2-1 The SR Application Header Context Tag

An example for the log entry will be:

```
<log id="1" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="SRAppHeader" param="openWindow" value="specialTools"/>
</log>
```

Figure 2-9 SR Application Header Log Entry Example

This is another example for clicking "Search Documentation (PDF)" button. The log entry will be:

```
<log id="1" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12"
  <context function="pdfDocumentationSearch" param="searchMode" value="VehicleSeries" />
  <context function="pdfDocumentationSearch" param="vehicleSeries" value="CF65" />
  <context function="pdfDocumentationSearch" param="documentationType" value="Maintenance" />
  <context function="pdfDocumentationSearch" param="title" value="Safety and main" />
  <context function="pdfDocumentationSearch" param="language" value="English"/>
</log>
```

Figure 2-10 "Search Documentation (PDF)" Button Log Entry Example

2.2.3.2 Q1 – The Lookup

In the Q1 part of the Service RAPIDO, it contains 3 various buttons. There are:

- Chassis No
- Engine No
- Vehicle Series

Each will trigger a log entry.

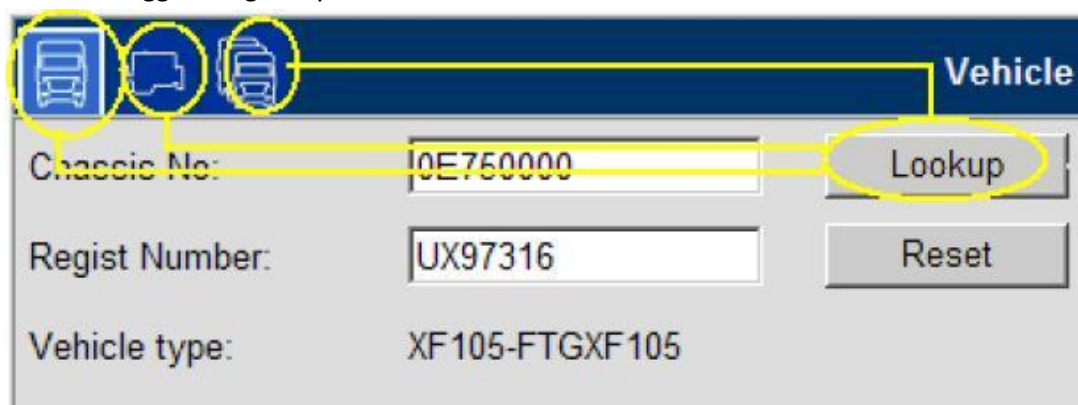


Figure 2-11 SR Q1 - The Lookup Logged Functions

The list below is the context tag for SR Q1 – The Lookup which contains the following values.

Function-name	Function-Param	Function-value
Q1ChassisLookup	chassisNo	0E750000 (e.g.)
	registNumber	UX97316 (e.g.)
Q1EngineLookup	engineNo	M01116 (e.g.)
Q1VehicleSeriesLookup	vehicleSeries	CF65IV (e.g.)

Table 2-2 SR Q1 - The Lookup Context Tag

An example for the log entry will be:

```
<log id="1" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q1ChassisLookup" param="chassisNo" value="0E750000"/>
</log>
```

Figure 2-12 SR Q1 - The Lookup Log Entry Example

2.2.3.3 Q2 – Job Information

By clicking on the buttons in the “Job Information” area, an entry in the log file will be produced. But it has a constraint, clicking on the “Job Code Search” button in the Q2 will not produce a log entry, but clicking on the “Search Wizard” will produce an entry in the log file.



Figure 2-13 SR Q2 - Job Information Logged Functions

The list below is the context tag for SR Q2 – Job Information which contains the following values.

Function-name	Function-Param	Function-value
Q2JobInformation	visualSearch	<empty>
	receivingInspection	<empty>
	maintenance	<empty>
	searchWizard	<empty>
	searchForName	wheel hub

Table 2-3 SR Q2 - Job Information Context Tag

And here is for the example of the log entry.

```
<log id="2" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q2JobInformation" param="searchForName" value="wheel hub"/>
</log>
```

Figure 2-14 SR Q2 - Job Information Log Entry Example

2.2.3.4 Q2 – Job Code Search

This part will appear if the user filled the “Search For Name” field and then clicked on the “Search” button. In Q2 – Job Code Search, only by clicking “Search” button, a log entry will be saved.

Figure 2-15 SR Q2 - Job Code Search Logged Functions

The list below is the context tag for SR Q2 – Job Code Search which contains the following values:

Function-name	Function-Param	Function-value
Q2JobCodeSearch	code	E;1409;;;
	ata	<empty>
	laborOperationCode	<empty>

Table 2-4 SR Q2 - Job Code Search Context Tag

An example of the log entry will be:

```
<log id="2" time="11-10-2010 11:00" appl="SR" sessionId="e3eedde31" ip="192.168.32.12">
  <context function="Q2JobCodeSearch" param="code" value="E;1409;;;" />
</log>
```

Figure 2-16 SR Q2 - Job Code Search Log Entry Example

2.2.3.5 Q2 – Search Documentation

By clicking on the "Search" button a log entry will be saved. However please note that with the HP-QC #81 the search will be triggered automatically when changing the selected "Documentation Type" from the combo box and the "Search" button will be removed. It means that the log entry will be introduced when the element is changed in the documentation type.

Figure 2-17 SR Q2 - Search Documentation Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q2DocumentationSearch	docType	Diagnosis

Table 2-5 SR Q2 - Search Documentation Context Tag

This is an example of the log entry for SR Q2 – Search Documentation

```
<log id="2" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q2DocumentationSearch" param="docType" value="Diagnosis"/>
</log>
```

Figure 2-18 SR Q2 - Search Documentation Log Entry Example

2.2.3.6 Q2 – Search Diagrams

A log entry will be generated only when the ESV Search Wizard is opened.



Figure 2-19 SR Q2 - Search Diagrams Logged Functions

The list below is the context tag which contains the following values for SR Q2 – Search Diagrams.

Function-name	Function-Param	Function-value
Q2DiagramSearch	docType	Electrical Installation

Table 2-6 SR Q2 - Search Diagrams Context Tag

Here is an example of the log entry for SR Q2 – Search Diagrams.

```
<log id="2" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q2DiagramSearch" param="docType" value="Electrical Installation"/>
</log>
```

Figure 2-20 SR Q2 - Search Diagrams Log Entry Example

2.2.3.7 Q3 – Jobs

This function is logged when the user expands a job. The log entry will contain the Job Code value, but please note that only level-0 jobs are logged.

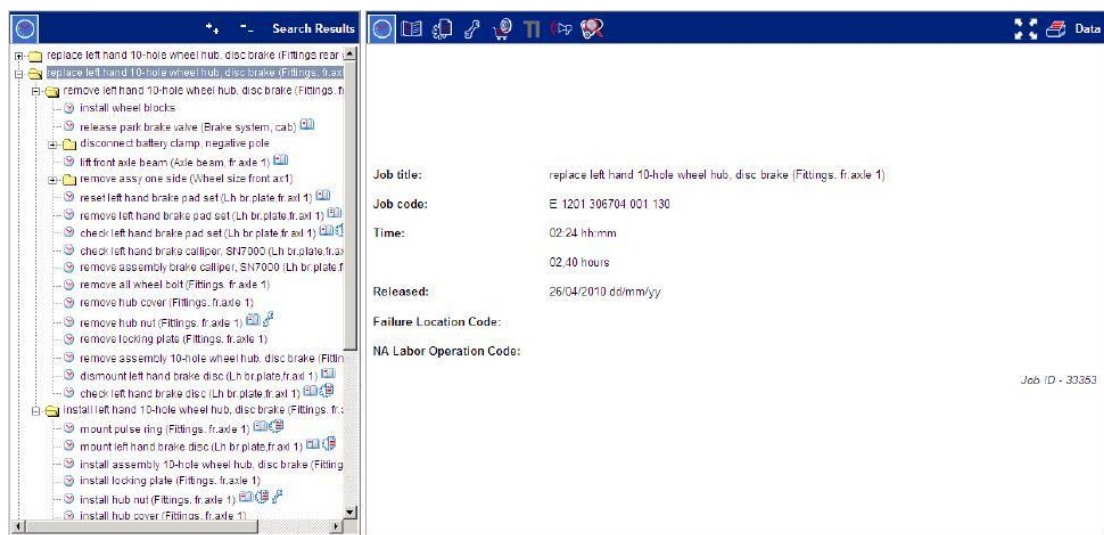


Figure 2-21 SR Q3 - Jobs Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q3Jobs	expand	E 1201 306704 001 130

Table 2-7 SR Q3 - Jobs Context Tag

Here is an example of the log entry for SR Q3 – Jobs:

```
<log id="2" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q3Jobs" param="expand" value="E 1201 306704 001 130"/>
</log>
```

Figure 2-22 SR Q3 - Jobs Log Entry Example

2.2.3.8 Q3 – Documentation

By clicking or expanding one of the documentation file which are appeared in Q3, will produce a log entry with the title of the documentation.

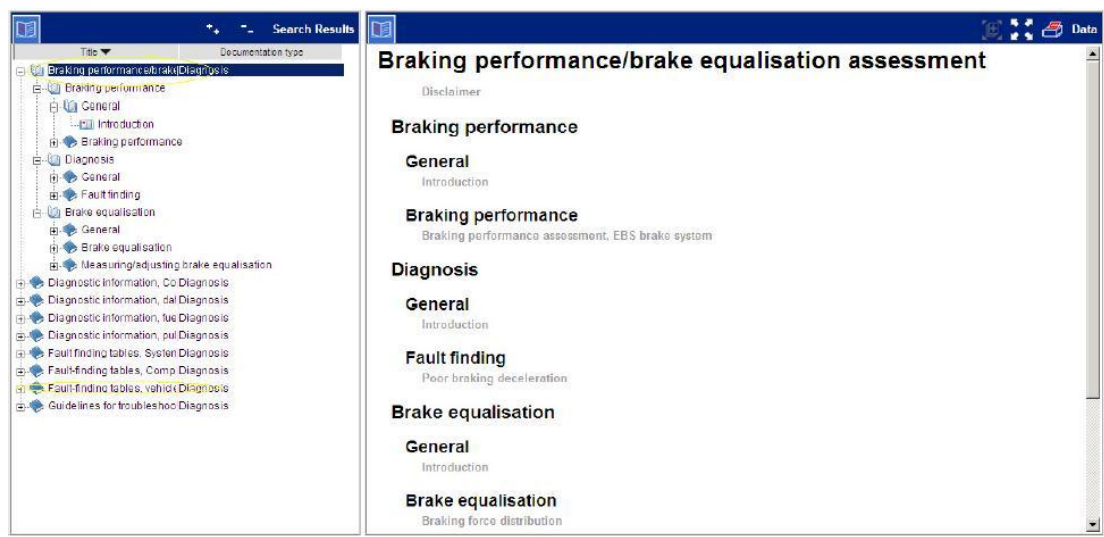


Figure 2-23 SR Q3 - Documentation Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q3Documentation	expand click	"PUB001" "PUB002"

Table 2-8 SR Q3 - Documentation Context Tag

For an example of the log entry is in the example below.

```
<log id="2" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q3Documentation" param="expand" value="PUB001"/>
</log>
```

Figure 2-24 SR Q3 - Documentation Log Entry Example

2.2.3.9 Q4 – Jobs Header Buttons

In this part consists of the following buttons:

- Explanation
- Technical Data
- Special Tools
- Parts Consumption
- TI
- Parts Viewer

Clicking on one of the buttons in Q4 – Jobs Header Buttons will only result in a log entry if a server-request is triggered. In this part cached elements do not produce log-entries. Within

“Explanation”, “Technical Data”, “Special Tools”, operations in that buttons do not produce log-entries too. Clicking in the “Parts Consumption” button on a part which opens “Parts Viewer” will create a log entry indicating this part-no was clicked upon.

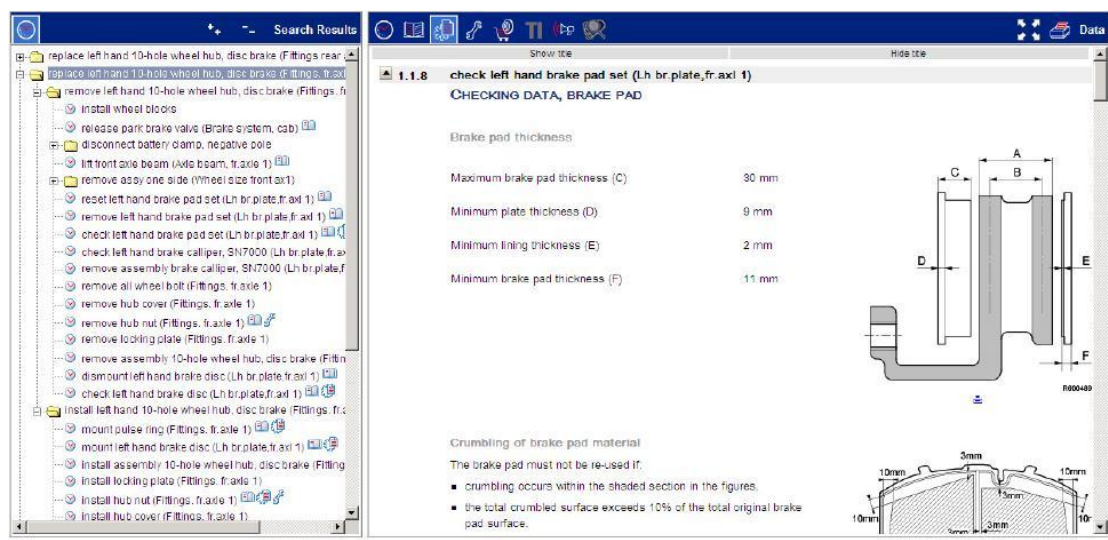


Figure 2-25 SR Q4 - Jobs Header Buttons Logged Functions

The context tag will contain following values:

Function-name	Function-Param	Function-value
Q4Jobs	click	Explanation Technical Data Special Tools PartsConsumption TI Field Actions PartsViewer
Q4JobsPartsConsumption	click	1643070

Table 2-9 SR Q4 - Jobs Header Buttons Context Tag

An example of the log entry will be:

```
<log id="5" time="11-10-2010 11:00" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q4Jobs" param="click" value=" PartsConsumption"/>
</log>
```

Figure 2-26 SR Q4 - Jobs Header Buttons Log Entry Example

This is an exception for the “Parts Consumption”.

```
<log id="6" time="11-10-2010 11:01" appl="SR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q4JobsPartsConsumption" param="click" value="1643070"/>
</log>
```

Figure 2-27 SR Q4 - Jobs Header Button "Parts Consumption" Log Entry Example

2.2.4 Parts RAPIDO

The picture below will describe the general logged functions which are already available in Parts RAPIDO application.

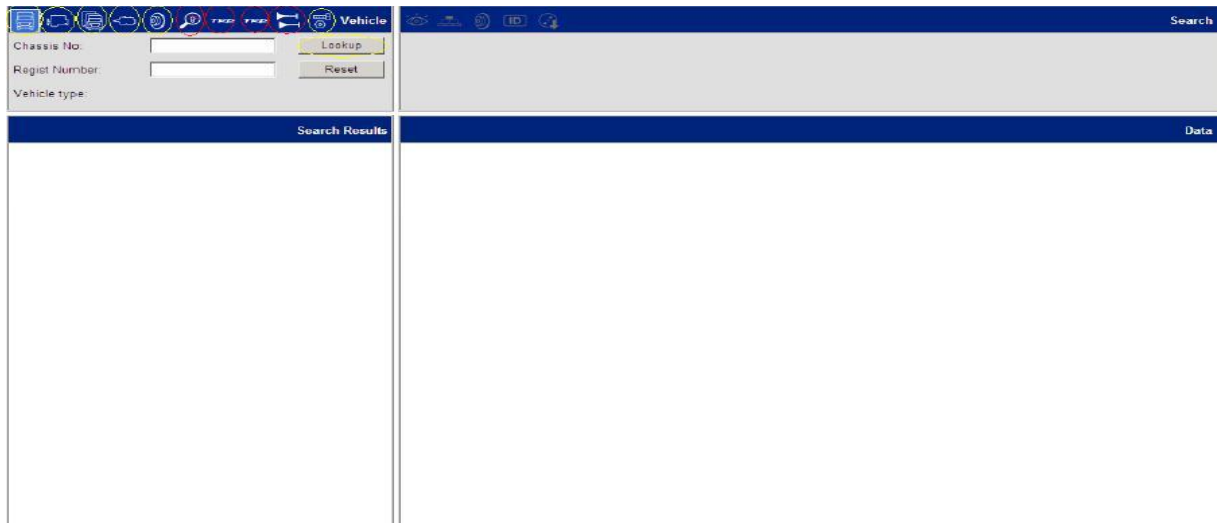


Figure 2-28 Parts RAPIDO General Logged Functions

2.2.4.1 PR Application Header

This part is located on top/header of the application. By clicking on the buttons, it will be saved in the log entry, but only the following buttons:

- RAPIDO Message
- Picking List
- Help
- RAPIDO Catalogue

The users who change the language are not to be logged for Parts RAPIDO. For RAPIDO Catalogue will log its entries.



Figure 2-29 PR Application Header "RAPIDO Catalogue" Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
PRApplHeader	openWindow	comments help pickList
PRCatalogue	openWindow	mountingInstruction msds printingMatter partsBulletins rapidoCommercial

Table 2-10 PR Application Header Context Tag

An example of the log entry for PR Application Header:

```
<log id="6" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="PRApplHeader" param="openWindow" value="comments"/>
</log>
```

Figure 2-30 PR Application Header Log Entry Example

This one is an example of the log entry for opening "RAPIDO Catalogue".

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="PRCatalogue" param="openWindow" value="msds" />
</log>
```

Figure 2-31 PR Application Header "RAPIDO Catalogue" Log Entry Example

2.2.4.2 Q1 – The Lookup with Context

For lookup functions can be through via:

- Chassis No
- Engine No
- Vehicle Series
- Comp. Ref.
- Part No

Each will trigger a log entry.

Figure 2-32 PR Q1 - The Lookup with Context Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q1ChassisLookup	chassisNo registNumber	0E750000 (e.g.) UX97316 (e.g.)
Q1EngineLookup	engineNo	M01116 (e.g.)
Q1VehicleSeriesLookup	vehicleSeries vehicleSubType	CF65IV (e.g.) 065XX (e.g.)
Q1CompRef	componentRef	
Q1PartNo	partNo	1388977 (e.g.)

Table 2-11 PR Q1 - The Lookup Context Tag

An example of the log entry will be:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q1ChassisLookup" param="chassisNo" value="0E750000"/>
</log>
```

Figure 2-33 PR Q1 - The Lookup Log Entry Example

2.2.4.3 Q1 - Other Buttons

For the other buttons in Q1, the log entry will be generated if the user clicked the buttons; it is just only clicking buttons. These are for the following buttons:

- Competitor Reference
- TRP
- TRP UK
- Accessories
- Assortments

The screenshot shows the top navigation bar of the DAF Vehicle interface. It contains several icons: a truck, a car, a bus, a truck with a trailer, a truck with a crane, a truck with a crane and a truck, a truck with a crane and a truck, a truck with a crane and a truck, and a truck with a crane and a truck. The word 'Vehicle' is displayed on the right. Below the navigation bar, there are three input fields: 'Chassis No:', 'Regist Number:', and 'Vehicle type:'. To the right of these fields are two buttons: 'Lookup' and 'Reset'.

Figure 2-34 PR Q1 - Other Buttons Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q1GeneralButtons	competitorReference trp trpuk accessories	<empty>

Table 2-12 PR Q1 - Other Buttons Context Tag

Here is an example of the log entry for PR Q1 – Other Buttons:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q1GeneralButtons" param="competitorReference"/>
</log>
```

Figure 2-35 PR Q1 - Other Buttons Log Entry Example

2.2.4.4 Q2 – Visual Search

Clicking “Visual Search” button in Q2 will be saved in a log-entry.

The screenshot shows the DAF Vehicle interface with the 'Visual Search' button highlighted. The interface includes a top navigation bar with the DAF logo and 'A PACCAR COMPANY' text. Below the navigation bar, there are three input fields: 'Chassis No:', 'Regist Number:', and 'Vehicle type:'. To the right of these fields are two buttons: 'Lookup' and 'Reset'. The 'Visual Search' button is located in the top right corner of the interface. The 'Search Results' section is visible at the bottom of the interface.

Figure 2-36 PR Q2 - Visual Search Logged Functions

The context tag for this par will contain the following values:

Function-name	Function-Param	Function-value
Q2VisualSearch	openVs	<empty>

Table 2-13 PR Q2 - Visual Search Context Tag

Here is an example of the log entry for Q2 – Visual Search:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q2VisualSearch" param="openVs" />
</log>
```

Figure 2-37 PR Q2 - Visual Search Log Entry Example

2.2.4.5 Q2 – Maingroup

For the PR Maingroup in Q2, the log entry will be saved only by clicking the main part. These are the following parts in the picture below.

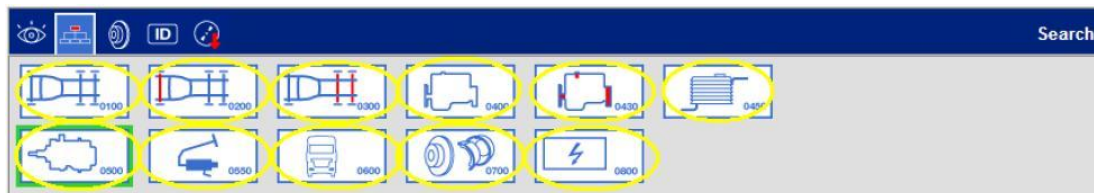


Figure 2-38 PR Q2 - Maingroup Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q2Maingroup	mainGroup	0100 (e.g.) 0200 (e.g.)

Table 2-14 PR Q2 - Maingroup Context Tag

Here is the example of the log entry for PR Q2 – Maingroup:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q2Maingroup" param="mainGroup" value="0100"/>
</log>
```

Figure 2-39 PR Q2 - Maingroup Log Entry Example

2.2.4.6 Q2 – ID Card

By clicking on “ID Card” button, it will be saved in the log entry data.



Figure 2-40 PR Q2 - ID Card Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q2IdCard	open	<empty>

Table 2-15 PR Q2 - ID Card Context Tag

The example of the log entry for PR Q2 – ID Card will be:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q2IdCard" param="open" />
</log>
```

Figure 2-41 PR Q2 - ID Card Log Entry Example

2.2.4.7 Q2 – DAVIE

A log entry will be saved if the users click on the DAVIE download image.



Figure 2-42 PR Q2 - DAVIE Logged Functions

The context data will contain the following values:

Function-name	Function-Param	Function-value
Q2DavieDownload	download	<empty>

Table 2-16 PR Q2 - DAVIE Context Tag

An example of the log entry will be:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eedde31" ip="192.168.32.12">
  <context function="Q2DavieDownload" param="download" />
</log>
```

Figure 2-43 PR Q2 - DAVIE Log Entry Example

2.2.4.8 Q3 – Component Group Result Search

By clicking on one of the component groups will be saved in the log entry. It contains three information. There are:

- Component group
- Description
- Comp. Ref.

Search Results		
C.Grp	Description:	Comp.Ref.
1081	Wheel size front ax1	1393726/2
1085	Wheel size rear ax.1	1335122/2
1091	Fittings wheel f1	1282755/1
1095	Fittings wheel r1	0361667/1
1101	Chassis frame	1630580/13
1102	Suspens.front axle 1	1607001/3
1103	Stabil. front axle 1	1425495/4
1104	Shock abs. tr.axle 1	1398692/6
1105	Suspens. driven axle	1368302/18
1106	Stabil. driven axle	1368306/2
1107	Shock abs. driv-axle	1440396/3
1117	Frame EAS	1671550/14
1128	Cab step 1	1645775/3
1131	Battery box	1649539/22
1142	EAS fuel pipes	1671526/21
1146	Fifth wh. mnt. plate	1379910/1
1147	Catwalk + mountings	1653398/18
1148	Fifth wheel	1436893/2
1149	Fender rear axle	1614874/3
1151	Propeller shafts	1650879/1
1152	Fuel tank	1736049/4
1153	Fuel lines	1807277/5

Figure 2-44 PR Q3 - Component Group Result Search Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q3CGroup	compGroup	1103 (e.g.)
	description	Stabil.front axle1 (e.g.)
	compRef	1425495/4(e.g.)

Table 2-17 PR Q3 - Component Group Result Search Context Tag

An example of the log entry will be:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="Q3CGroup" param="compGroup" value="1103" />
  <context function="Q3CGroup" param="description" value="Stabil.front axle1"/>
</log>
```

Figure 2-45 PR Q3 - Component Group Result Search Log Entry Example

2.2.4.9 Q3 – PartNo Result Search

By clicking on one of the PartNo will save a log entry and contain description on it.

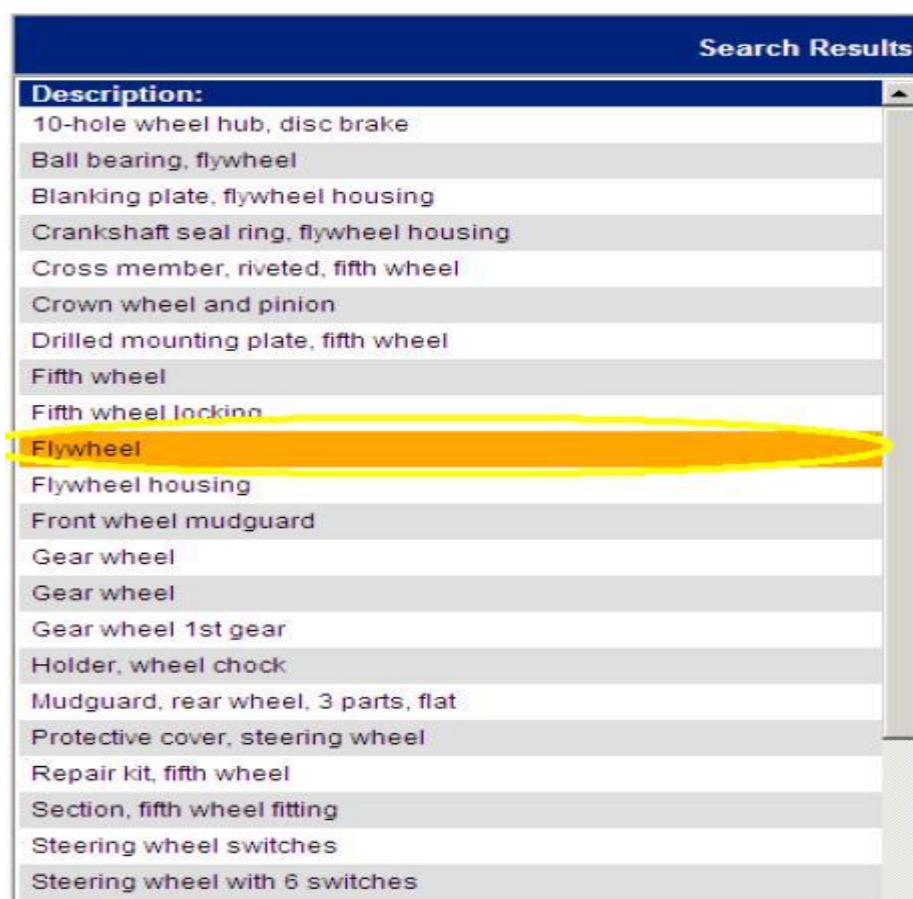


Figure 2-46 PR Q3 - PartNo Result Search Logged Functions

The context data will contain the following values:

Function-name	Function-Param	Function-value
Q3PartNo	description	"flywheel" (e.g.)

Table 2-18 PR Q3 - PartNo Result Search Context Tag

An example of the log entry will be:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eedde31" ip="192.168.32.12">
  <context function="Q3PartNo" param="description" value="flywheel" />
</log>
```

Figure 2-47 PR Q3 - PartNo Result Search Log Entry Example

2.2.4.10 Q4 - ID Card Information

The log entry will be saved when the users clicked on one of the buttons in the Q4 ID Card Information. For additional, in the "Hardware" and "TropCo" tab, clicking on an element will also log an entry.

Serial	Function-name	Function-value
0100	Ecu	
010	Volume fuel tank	850+430
065	Smoke number	064
114	Version	02
123	Rear overhang (AE)	AE 0.99
210	Color code chassis frame	C4P500GRY
0200	Unit data standard	
129	1st front axle type	152N
158	Front spring type	PARBVVR
0300	Ecu data drive line	
008	Rear axle 1 number	9FN039
132	Rear axle type	AAS1347
133	Rear axle ratio	2.69
134	Differential lock	MECBLAA
155	Rear spring type	LUVACHT
0400	Ecu data ch / cab	
002	Engine number	A-12590
137	Engine type	MX
163	Service Interval	CVT.VLD
0500	El. inst., variants	
004	Gear box number	00508639
140	Gearbox type	12A2330
142	Gearbox PTO type	MPTO/AS
0550		
054	Steering wheel lock	C4NBADCEHDB

Figure 2-48 PR Q4 - ID Card Information Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
Q4IdCard	click	Serial Hardware Software Systems History TropCo
		FieldActions
Q4IdCardHardware	hardwareId	1081 (e.g.)
Q4IdCardTropCo	tropCold	

Table 2-19 PR Q4 - ID Card Information Context Tag

2.2.5 PartsViewer

The opening of PartsViewer is not to be logged; the logged function is located in yellow marked.

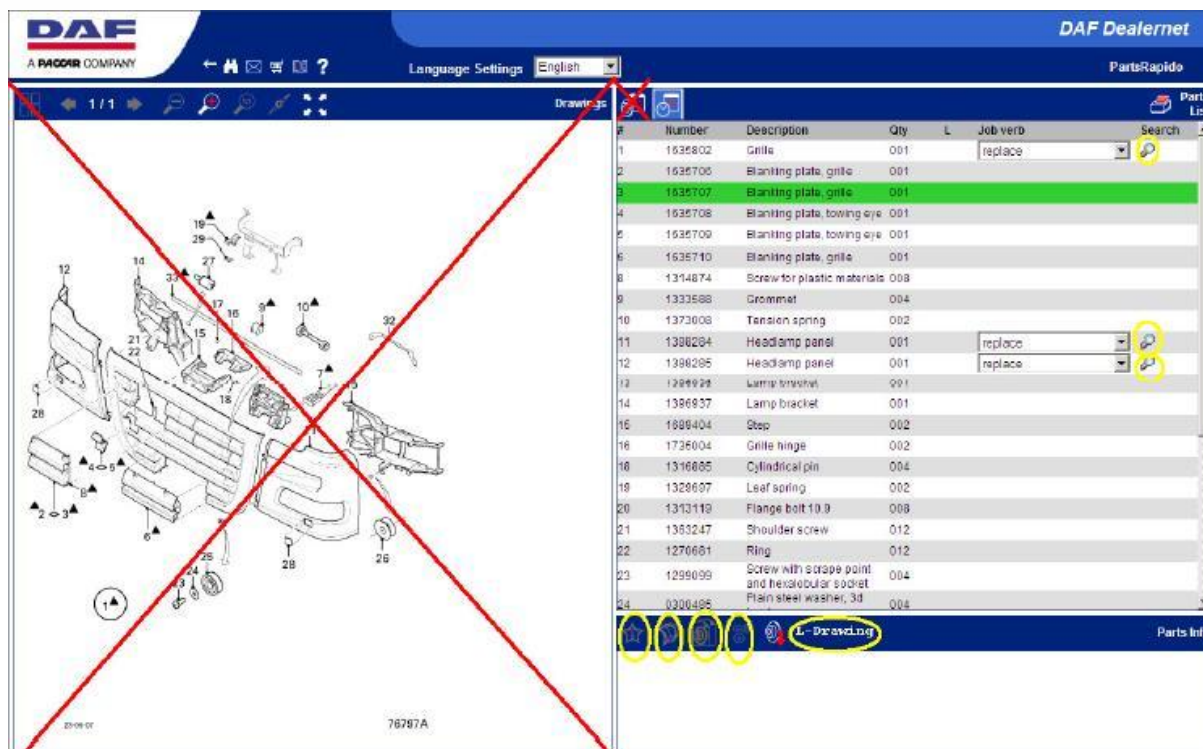


Figure 2-49 PartsViewer Logged Functions

2.2.5.1 Parts Info

Clicking on one of the icons in Parts Info bar will be logged and it is containing the PartNo that was selected (marked in green in the joblist/partlist).



Figure 2-50 Parts Info Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
PVPartsInfo	clicked	Commercials Rel.Sales PartsBulletins Assortment LDrawing
	partNo	1635707 (e.g.)

Table 2-20 Parts Info Context Tag

Here is an example of the log entry:

```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="PVPartsInfo" param="clicked" value="commercials" />
  <context function="PVPartsInfo" param="partNo" value="1635707"/>
</log>
```

Figure 2-51 Parts Info Log Entry Example

2.2.5.2 Job List

In this part the only action which will be logged is the clicking on the JobSearch icon.



#	Number	Description	Qty	L	Job verb	Search
1	1635002	Grille	001		replace	
2	1635706	Blanking plate, grille	001			
3	1635707	Blanking plate, grille	001			
4	1635708	Blanking plate, towing eye	001			
5	1635709	Blanking plate, towing eye	001			
6	1635710	Blanking plate, grille	001			
8	1314874	Screw for plastic materials	008			
9	1333588	Grommet	004			
10	1373008	Tension spring	002			
11	1398284	Headlamp panel	001		replace	
12	1398285	Headlamp panel	001		replace	
13	1396936	Lamp bracket	001			
14	1396937	Lamp bracket	001			
15	1689404	Step	002			
16	1736004	Grille hinge	002			
18	1316886	Cylindrical pin	004			
19	1329697	Leaf spring	002			
20	1313119	Flange bolt 10.0	008			
21	1363247	Shoulder screw	012			
22	1270681	Ring	012			
23	1299099	Screw with scrape point and hexalobular socket	004			
24	0300486	Plain steel washer, 3d	004			

Figure 2-52 Job List Logged Functions

The context tag will contain the following values:

Function-name	Function-Param	Function-value
PVJobList	jobSearchVerb	VERB01 (e.g. verbid)

Table 2-21 Job List Context Tag

Here is an example of the log entry:


```
<log id="7" time="11-10-2010 11:01" appl="PR" sessionId="e3eeedde31" ip="192.168.32.12">
  <context function="PVJobList" param="jobSearchVerb" value="Verb01" />
</log>
```

Figure 2-53 Job List Log Entry Example

2.3 The Assignment

The Assignment is defined as “Business Intelligence Management Report Using RAPIDO Log Data”.

It means that After Sales Department of DAF Trucks N.V. wants to know which dealers that are often accessing the system and which functions in the system are useful or useless. Actually now they think if their system works so well and has already improved their business process, but they still do not know if the system they use is effective or not. They want the intern to provide a management information report to see about the effectiveness for each key performance indicator based on stored RAPIDO log data. The data sources for the management report will come from the RAPIDO log data, which is in XML type and will be imported first into Excel file. The department wants a report which contains information table and chart showing the result. This project needs for 100 working days, and it will be spent for at least 8 hours per day. With information like that, hopefully the project is still kept on track.

2.4 The Problems and The Objectives

At the beginning period since DAF After Sales Department has a possibility to log any activities that their users have done in RAPIDO application, they already had a report for the RAPIDO effectiveness. All their processes were done manually, started from inserting the data into the database until make some queries to create a report. Company found that no one in the department can do like that every month, they thought the way to create RAPIDO reports is too old. Every person in the department is very busy with their own tasks. So they want to have a simple application which can import the data into the database automatically and create a report for Parts and Service RAPIDO just by clicking one button.

Second problem is that the old report only contains for the total usage of each button. The department also wants to know the usage by per country and per user parameters. If they had that kind of reports, perhaps they could do some actions for their dealers who access the RAPIDO rarely. The department also wants to have a report for the connection of job code and the buttons the users pressed after that. It means that will be needed some extra queries for the database to fulfill this requests.

The objective of this project is to provide DAF After Sales Department a management report that contains enough information based on RAPIDO log data. The report must meet the requested requirements from internal people in the department who are involved in this project. The output information from the report will be in the information tables and also charts type. The functional, non-functional and information requirements will be listed in the MoSCoW table (see Appendix III: The Project Charter)

3. PROBLEM SOLVING METHODOLOGY

This chapter will describe about the way to solve the company problem within 100 working days of the internship. The intern used Systems Development Life Cycle (SDLC) for developing the management report. SDLC method is a systematic approach to the development of the information systems. Within SDLC method, there are some specific methods which can be used for systems development. The intern decided to use the incremental phasing approach for this project, which is one of the SDLC's method type. It is divided into 5 phases by having 3 increments. The activities which are done in SDLC methodology are:

- Systems analysis
- Requirements analysis
- Systems design
- Implementation
- Testing
- Evolution

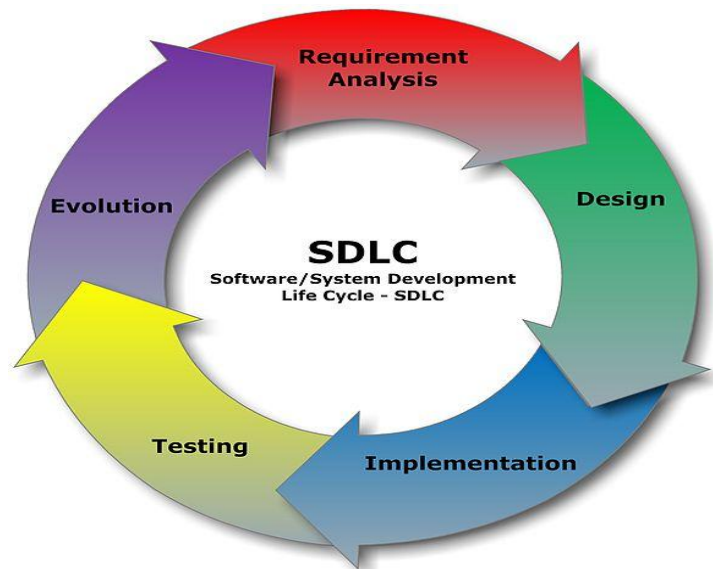


Figure 3-1 Model of Systems Development Life Cycle

All that activities are already mentioned into 5 phases. Each increment acted as a milestone in this project and at the end of the increments was held a meeting with a company supervisor and school supervisor to discuss the progress and the result of the project.

3.1 Initiative Phase

In the initiative phase, the intern learned about the RAPIDO application which is provided by DAF After Sales Department for the dealers (the system used, how does it work, the input and the output of the application, and etc.). The intern also had a research on the log data from Parts and Service RAPIDO application, which was given by the functional application manager, Mr. Joeri van Goudoever. Few meetings were held with a company supervisor and the functional application manager to discuss the application, the log data file which is connected with the RAPIDO application and also the details of the project. From this part, project plan document was made. In the project plan document, it contained the details of the project, the time phasing to approach the goal of the project, the approaching way to solve the problem (to see more details, see in the appendix II, The Project Plan). The project plan was sent to the company supervisor and school supervisor to have it reviewed. After have reviewed, few updates were made based on the company supervisor and school supervisor feedbacks. The latest version was approved by both and acted as a guide to complete this project. Beside project plan, the intern also made a project charter which the template was given by DAF. Few meetings were held with a company supervisor and also with a senior manager in After Sales Department to discuss the project

charter. The latest version was also approved by company mentor and school mentor (to see more details, see in the appendix III, The Project Charter).

Increment: 1st increment.

Result: Approved project plan and project charter.

3.2 Definition and Design Phase

In the definition and design phase, the intern had some interviews with internal people in DAF After Sales Department which are involved in this project to gather information about requirements for the project. All requirements were received and formulated by the intern to define the scope of the project. Presentation was held with all interviewers to show the limitations of the requirements. With all this information, requirements analysis document was made. Before the company and school supervisor approved this document, few changes and updates were made based on the feedbacks from both of them.

In this phase while making a requirements analysis document, the intern also made a prototype of the application. This prototype is to prove how the design will look like and how the information will be showed in the application.

Increment: 1st increment.

Result: Approved requirements analysis document and a prototype were made.

3.3 Realization Phase

In the realization phase, the intern started to develop the database and also the application using Microsoft Access 2010 and Microsoft Excel 2010. It was started by building the database of RAPIDO log data. After that it continued by making some queries for all requirements which the intern already got. Next step was to build a simple user friendly application in Microsoft Access 2010 for showing reports of all requirements. Two-weekly meetings with the company supervisor were held to keep the project was still on the right track. At the end, the built of the application was finished with providing all requirements in the requirements table.

Also in this phase, the company supervisor tested the application. An issue document was made by the company supervisor containing some issues for the application or the requirements which are not completed. After that the intern fixed and updated the application based on the issue list from the company supervisor.

The intern made also the user manual for the internal people in DAF After Sales Department who wants to use it. The document contains the steps how to use the program, and it is also for the Functional Application Manager which will be act as an admin. Admin has to update the database by monthly basis. The company supervisor reviewed the document and gave some feedbacks

Increment: 2nd increment and 3rd increment

Results: The updated application based on requests from the company supervisor.

The user manual until the revision version (after got some feedbacks from the Company Supervisor).

3.4 Transfer Phase

In the transfer phase, the intern delivered the final Microsoft Access management report application, included updated functions for the application. Another thing, the intern delivered the final version for all documentations regarding the application to the company.

The important thing was the intern had to prepare the final report and the presentation for having defense in school. The intern had some discussions with the company supervisor about the contents of final report and the presentation. Company supervisor signed the final report and some other documents and he also gave some grades for the intern's performance while having internship in the company. All documents were collected by the intern and delivered to the school.

Increment: 3rd increment.

Results: The final management report application was delivered to the company.
Handed over the user manual document and some other documents.
Handed over the final report to the school.

3.5 After-Care Phase

This is the final phase of this project/assignment. In this phase the intern had to train internal people to use the report. This process also fully helped by having a presentation about the application and showing them the user manual document. The intern also had to explain how to be acted as an admin to the functional application manager.

This process was also useful for the intern to have a practice how to have a good presentation before he will have a thesis defense in school. The intern also could get some feedbacks from internal people in company to be better having presentation in school.

Increment: 3rd increment.

Results: Presentation in company

4. THE APPLICATION

This chapter describes the detailed management report application in Microsoft Access 2010, from the structure of the database and the user interface of the application. It also describes how the system works.

4.1 The Management Report Application

This management report application is a simple application for processing RAPIDO log file data into a monthly report of the application usage. Log data file which are produced from RAPIDO application will be the input/data sources and the output will be an excel report showing some tables and graphics.

This management report is using 2 programs which are:

- Microsoft Access
This acts as a database and user interface of the application.
- Microsoft Excel
This acts as a report template and graphic reports.

This figure shows the system architecture of the management report application. First, the users start the system by open Microsoft Access. After that, the users can use all features that are available in the application. This application has 2 type of user, there are:

- An Administrator User
The user who has a responsibility to import the log file into database and also delete the data once a month after has been created a report to make the database size stable. This user also has a privilege as a normal user.
- Normal Users
This user can create monthly reports for Parts RAPIDO and Service RAPIDO.

Next, there is more detailed information about the system architecture.

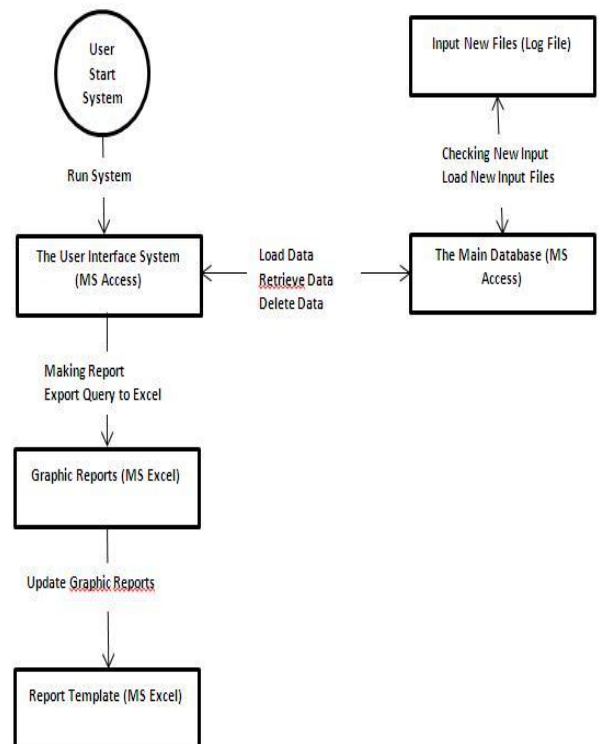


Figure 4-1 System Architecture of Management Report Application

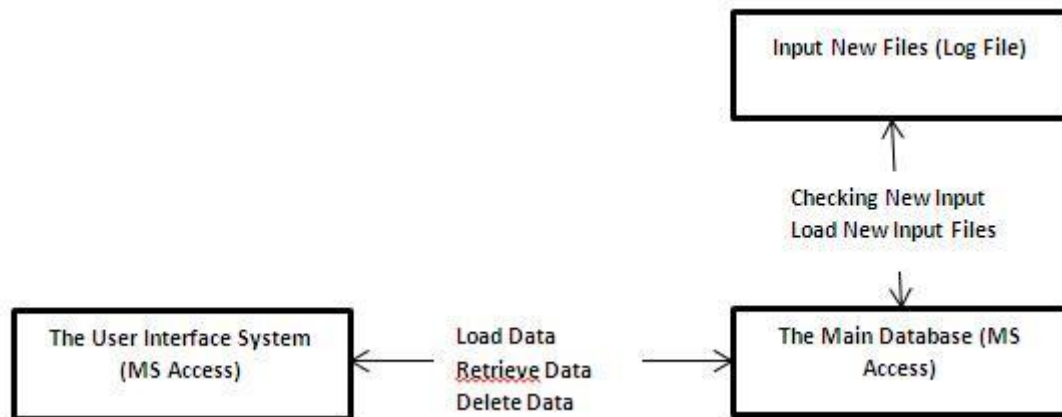


Figure 4-2 System Architecture of Microsoft Access

This system architecture shows part of the system that is used in Microsoft Access. Beside it is used as a database for RAPIDO log file, Microsoft Access is also used as making user interface for the application. Microsoft Access application connects to the database itself to:

- Import new data (to the main database)
- Delete data

After has been created a report, the data in database has to be deleted once a month to make the database size stable

- Retrieve data

The system has to connect to main database to create reports for:

- Parts RAPIDO report
- Service RAPIDO report

Figure 4-3 shows the system architecture for part of connection between Microsoft Access and Microsoft Excel. Microsoft Excel is used as a report template and also for creating graphic report. The system flow is after the user runs a query; Microsoft Access application will get the data from the database itself and then export it to Microsoft Excel. The report will contain the table itself and also the graphic reports (histogram chart, pie chart, etc.). The excel report template file is only one file, it depends on which RAPIDO application that the user choose to create a report. The users can continue to investigate by looking the detail tables and graphics in the Excel file.

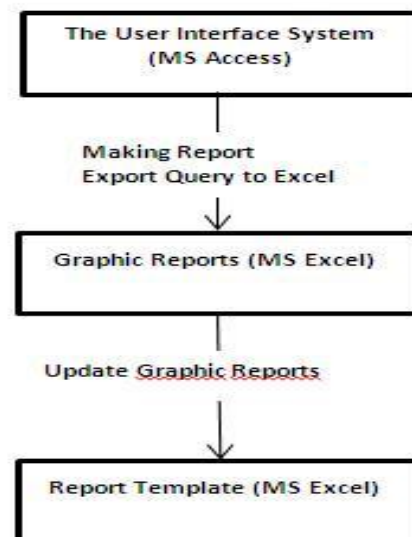


Figure 4-3 System Architecture between Microsoft Access and Microsoft Excel

The output of this management report application will be 2 kinds of reports. There are parts RAPIDO report and service RAPIDO report. Each report contains requested requirements from the department regarding the application usage. So parts RAPIDO report only contains of information requirement for Parts RAPIDO usage itself and service RAPIDO report only contains for Service RAPIDO itself. The report consists of table and chart. Figure 4-4 and 4-5 will show how the information reports look like.

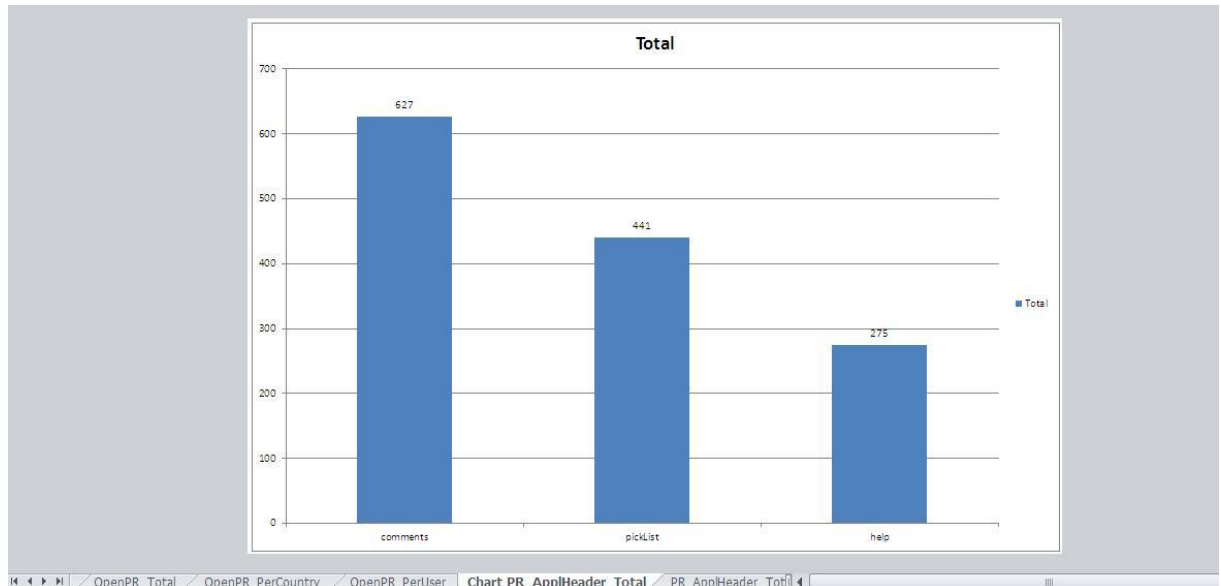


Figure 4-4 Chart Report

1	Component	Country	Total
2	comments	Netherlands	153
3	comments	Germany	101
4	comments	United Kingdom	96
5	comments	Poland	41
6	comments	Spain	34
7	comments	Belgium	31
8	comments	France	24
9	comments	Italy	15
10	comments	Ireland	13
11	comments	Austria	13
12	comments	Ukraine	11
13	comments	Romania	11
14	comments	Latvia	11
15	comments	Lithuania	9
16	comments	Brasil	8
17	comments	Czech Republic	7
18	comments	Georgia	7
19	comments	South Africa	6
20	comments	Switzerland	5
21	comments	Russian Federation	5
22	comments	Denmark	5
23	comments	Turkey	5
24	comments	Morocco	3
25	comments	Australia	3
26	comments	Finland	2
27	comments	Slovenia	2
28	comments	United States	1
29	comments	Cyprus	1
30	comments	Norway	1
31	comments	Tunisia	1
32	comments	Singapore	1

Figure 4-5 Table Report

4.2 Research and Decision Making

For the first step of doing this project, the intern had to analyze which tools that are going to be used to fulfill the requirements of the project. First, the intern suggested of using Microsoft SQL Server rather than Microsoft Access for the database of RAPIDO log files, because Microsoft Access has a limitation size of the database. The maximum size for Access file is around 2 gigabytes. Unfortunately the intern was not allowed to have an admin access for one of DAF SQL Server database. After having some discussions with the company supervisor, the intern decided to use Microsoft Access as a database and also for building the management report. The intern thought using Microsoft Access as a database is more than enough for building the management report. Another reason is that the report will not only be used by internal people in DAF after Sales Department, but it will be used by the other DAF branches in other countries.

The plus sides of using Microsoft Access are:

- The new application or management report does not need to be tested again in DAF real environment
- Every PC or laptop in DAF can open access file
- Microsoft Access has enough functions to fulfill the requirements
- It is quite easy to be operated by the user and also by the admin.
- Microsoft Access file can be easily sent to other DAF branches in other countries

But Microsoft Access has also some negative sides which gave the limitations for the management report. There are:

- Microsoft Access has a limitation size. The maximum size is around 2 gigabytes. It can be solved by monitoring and managing the file size by the admin. The admin can import the data for one month first and then if the managers have already made the reports for that month, the admin can delete the data and import the new data for the next month.
- Because of the size limitation, the admin always has to check the size of the access file. It is also affected for the report. The report will be the fixed report by monthly basis. It means that the users can only make a report for one month performance.

After having some researches on which tools that are going to be used, the intern had to check the log files from RAPIDO application. This will be the input for the management report. The log files are in XML file type.

```
- <root>
- <Log id="0" time="04-03-2012 14:25" appl="SR" sessionId="0ydh02j0rptqzrmpzmcyf32" ip="85.129.71.240">
  <Context function="OpenServiceRapido" param="" value="" />
</Log>
- <Log id="0" time="04-03-2012 14:26" appl="PR" sessionId="lryzjejn0tkvzi45bc2h3c55" ip="194.78.58.104">
  <Context function="OpenPartsRapido" param="" value="" />
</Log>
- <Log id="1" time="04-03-2012 14:26" appl="PR" sessionId="lryzjejn0tkvzi45bc2h3c55" ip="194.78.58.104">
  <Context function="Q1ChassisLookup" param="chassisNo" value="0e742346" />
</Log>
- <Log id="2" time="04-03-2012 14:27" appl="PR" sessionId="lryzjejn0tkvzi45bc2h3c55" ip="194.78.58.104">
  <Context function="Q2Maingroup" param="mainGroup" value="0400" />
</Log>
- <Log id="3" time="04-03-2012 14:27" appl="PR" sessionId="lryzjejn0tkvzi45bc2h3c55" ip="194.78.58.104">
  <Context function="Q3CGroup" param="compGroup" value="1401" />
  <Context function="Q3CGroup" param="compRef" value="1693489" />
  <Context function="Q3CGroup" param="description" value="Basisgedeelte" />
</Log>
- <Log id="4" time="04-03-2012 14:28" appl="PR" sessionId="lryzjejn0tkvzi45bc2h3c55" ip="194.78.58.104">
  <Context function="Q3CGroup" param="compGroup" value="1401" />
  <Context function="Q3CGroup" param="compRef" value="1693489" />
  <Context function="Q3CGroup" param="description" value="Basisgedeelte" />
</Log>
- <Log id="5" time="04-03-2012 14:28" appl="PR" sessionId="lryzjejn0tkvzi45bc2h3c55" ip="194.78.58.104">
  <Context function="Q3CGroup" param="compGroup" value="1401" />
  <Context function="Q3CGroup" param="compRef" value="1693489" />
  <Context function="Q3CGroup" param="description" value="Basisgedeelte" />
</Log>
- <Log id="0" time="04-03-2012 14:29" appl="PR" sessionId="t5cl5v2x5gcgaqmbilehtpjp" ip="195.109.63.4">
  <Context function="OpenPartsRapido" param="" value="" />
</Log>
- <Log id="1" time="04-03-2012 14:29" appl="PR" sessionId="t5cl5v2x5gcgaqmbilehtpjp" ip="195.109.63.4">
  <Context function="Q1ChassisLookup" param="chassisNo" value="0e850000" />
</Log>
```

Figure 4-6 Example for One of The XML Log File

The intern had tried to import the xml file into the access database, but the data were not successfully appeared. The intern founded the problem if the structure of this xml file is different with the usual xml file. The data are located in the attribute side so that is why Microsoft Access can't read it. The best way to read the data from xml file is through Microsoft Excel, and from excel file is easy to be imported to Microsoft Access. So the intern decided the data sources for the management report must be from excel file.

id	time	appl	sessionId	ip	function	param	value
2	0 04-03-2012 14:25	SR	0ydh02j0rptqzrmpzmcyf32	85.129.71.240	OpenServiceRapido		
3	0 04-03-2012 14:26	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	OpenPartsRapido		
4	1 04-03-2012 14:26	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q1ChassisLookup	chassisNo	0e742346
5	2 04-03-2012 14:27	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q2Maingroup	mainGroup	0400
6	3 04-03-2012 14:27	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	compGroup	1401
7	3 04-03-2012 14:27	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	compRef	1693489
8	3 04-03-2012 14:27	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	description	Basisgedeelte
9	4 04-03-2012 14:28	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	compGroup	1401
10	4 04-03-2012 14:28	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	compRef	1693489
11	4 04-03-2012 14:28	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	description	Basisgedeelte
12	5 04-03-2012 14:28	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	compGroup	1401
13	5 04-03-2012 14:28	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	compRef	1693489
14	5 04-03-2012 14:28	PR	lryzjejn0tkvzi45bc2h3c55	194.78.58.104	Q3CGroup	description	Basisgedeelte
15	0 04-03-2012 14:29	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	OpenPartsRapido		
16	1 04-03-2012 14:29	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q1ChassisLookup	chassisNo	0e850000
17	2 04-03-2012 14:29	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q2VisualSearch	openVs	
18	3 04-03-2012 14:29	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q2VisualSearch	openVs	
19	0 04-03-2012 14:29	SR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	OpenServiceRapido		
20	1 04-03-2012 14:30	SR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q1ChassisLookup	chassisNo	0e850000
21	2 04-03-2012 14:30	SR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q1ChassisLookup	chassisNo	0E850000
22	3 04-03-2012 14:30	SR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q2JobInformation	maintenance	
23	4 04-03-2012 14:30	SR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q3Jobs	expand	E 0000 000000 048 503
24	5 04-03-2012 14:30	SR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q4Jobs	click	Explanation
25	6 04-03-2012 14:33	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	OpenPartsRapido		
26	7 04-03-2012 14:33	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q1GeneralButtons	assortments	
27	8 04-03-2012 14:33	PR	t5cl5v2x5gcgaqmbilehtpjp	195.109.63.4	Q1GeneralButtons	assortments	

Figure 4-7 Log File After Imported to Excel

Another suggestion from the intern is about the structure of the database. The intern decided to continue the previous database for RAPIDO log data with one table, because the structure of the log data is already clear enough and the structure of the table is good too. It makes the admin easy to import the data into the database. The intern added one table for DAF dealers' data.

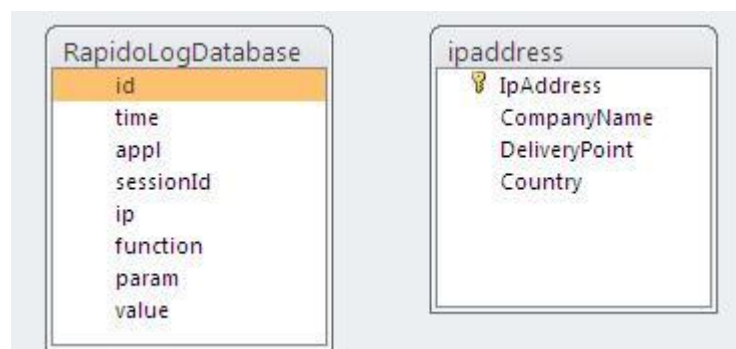


Figure 4-8 Example Tables for RAPIDO Log File Database

The 'ipaddress' table is a new table for information about IP address and DAF dealers name. This table was made to fulfill the requirements from department which wanted to see information regarding RAPIDO application per country and also per user. SXP, as a supplier for RAPIDO, made new improvements for the log data. They give the information in the log data about the user who accessed RAPIDO. The information contains such as login name, company name, company id, delivery point of the company, channel id, DDPD person id, and user agent.

id	time	appl	sessionId	ip	function	param	value
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	loginName	Shane Robbins
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	deliverPoint	22709
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	companyName	Brian Currie - Northampton
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	companyId	539
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	channelId	OU=Dealernet,OU=Channels,OU=ePortal,DC=eport
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	DDPDPersonID	51181
0	05-05-2013 00:21:20	SR	zp4qot553uskdo55xkfacr55	212.57.237.102	OpenServiceRapido	userAgent	Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.1;

Figure 4-9 New Information about User in RAPIDO

From that information, the intern made a query to create new table contains of IP address, company name, delivery point of the company, and the last is country. Another reason the intern decided to create a new table for the user is DAF After Sales Department doesn't have a database for IP address and company name who already accessed RAPIDO application. DAF After Sales Department only has a CSV excel table contains information about DAF dealers' name (company name), delivery point, and country. There was a problem when the intern tried to make reports for per country information. There is no information in the log data about the country where companies come from. So that's why the intern decided to insert the country name to the database manually. Another problem what the intern found was not all IP address that accessed RAPIDO were recorded in the database. It could be known as well by comparing the total amount of total clicking with the total amount for per user clicking. The amount was

different, but at least the intern had successfully got more than 50% IP address data for per user information report.

IpAddress	CompanyName	DeliveryPoi	Country
82.169.146.33	5002 PROD.Development 51000 C1302050	00838	Netherlands
82.122.10.35	6 Chemins Poids Lourds	30251	France
82.122.12.198	6 Chemins Poids Lourds	30251	France
82.122.133.150	6 Chemins Poids Lourds	30251	France
82.122.140.195	6 Chemins Poids Lourds	30251	France
82.122.142.174	6 Chemins Poids Lourds	30251	France
82.122.5.177	6 Chemins Poids Lourds	30251	France
92.27.156.243	A Herring Ltd	22818	United Kingdom
213.123.188.47	A M Bell DAF	22820	United Kingdom
31.153.55.95	A. Tricimitis Motors Ltd.	60021	Cyprus
93.109.112.66	A. Tricimitis Motors Ltd.	60021	Cyprus
91.187.203.66	A.I.B. Europe Assistance Trucks Services	42241	Italy
89.145.212.178	Aberystwyth Automotive Services	22819	United Kingdom
87.25.174.87	Abruzzo Diesel S.r.l.	42303	Italy
217.92.97.66	Adam Serr Spedition GMBH	25459	Germany
212.57.230.18	Adams Morey - Basingstoke	22959	United Kingdom
195.62.206.74	Adams Morey - Bournemouth	22728	United Kingdom
212.57.240.111	Adams Morey - Bournemouth	22728	United Kingdom
212.57.240.214	Adams Morey - Bournemouth	22728	United Kingdom
88.97.143.254	Adams Morey - Bournemouth	22728	United Kingdom
212.57.243.45	Adams Morey - Newport	22821	United Kingdom
212.57.240.113	Adams Morey - Portsmouth	22746	United Kingdom
88.97.144.14	Adams Morey - Portsmouth	22746	United Kingdom
212.57.230.101	Adams Morey - Salisbury	22805	United Kingdom
176.26.40.241	Adams Morey - Southampton	22729	United Kingdom
212.57.240.11	Adams Morey - Southampton	22729	United Kingdom

Figure 4-10 DAF Dealers New Database ("ipaddress" table)

The last suggestion for this project is the intern made a button to add new users/IP addresses in the "ipaddress" database. The reason of this case is sometimes there are some new users who have privilege to access Parts and Service RAPIDO. It can be also happened by the old users who use the new IP address. The button represents a query which searches and collects new IP addresses from "RapidoLogDatabase" and inserts it into "ipaddress" table. So probably the button can be used by the administrator in weekly when the department has already got the new log files. Unfortunately there is a problem for this suggestion. Because there is no information in the log file about the country from the company, so after new users or IP addresses are imported, the administrator has to add the country name in the database by manually.

4.3 User Interface of The Admin Side

This section will contain figures of function architecture of admin side. Beside they have a privilege to act as an administrator; they also have a privilege to act as a normal user.

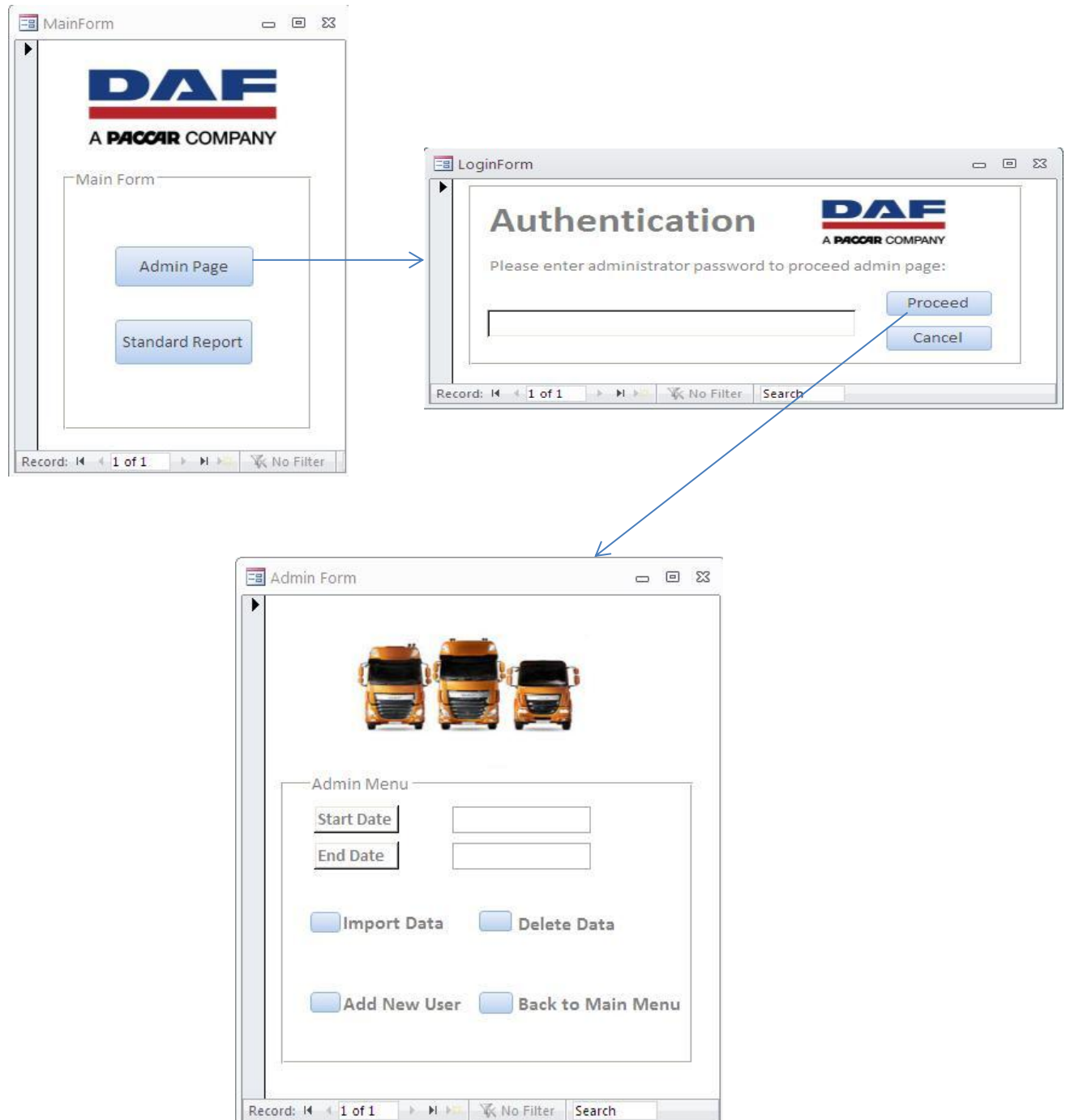


Figure 4-11 The Function Architecture of The Admin Side

4.4 User Interface of The User Side

This figure below is the function architecture of the user side.

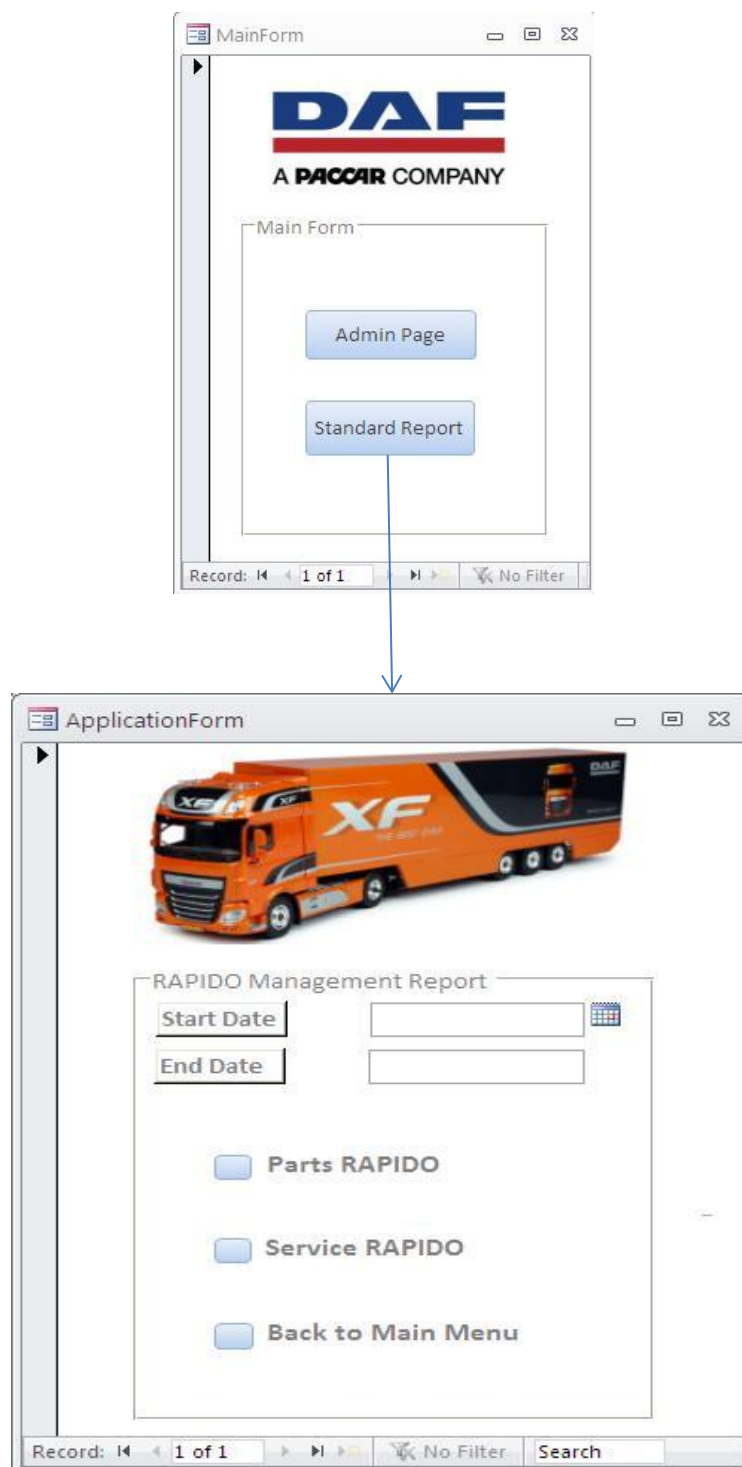


Figure 4-12 The Function Architecture of The User Side

5. RESULT

An application of management report for showing the effectiveness of the Parts and Service RAPIDO usage was completely built. It was built with all functionality and information requirements in the MoSCoW table (must and should areas). The report now can solve the company problems as started in the assignment, which they want to see the usage of their application for the dealers.

The report or application has been tested with the company supervisor for at least 1 month. There were some additional changes and updates that were requested from company supervisor. The intern has fixed some new additional requirements which the company supervisor asked. So the application has been through some changes and updates to make it better and becomes perfect as it can. The company supervisor has also seen the output of the application; it is an Excel file report.

The only problem for this application is about the process time. It is the normal problem if using Microsoft Access and the data size is quite big. It will take times for importing log file into the database and also for deleting data once a month. To create a report and export it into excel file also take times. But is not a big problem, the main goal for this project has been achieved. The application has an easy and understandable user interface. It provide simple way to be operated by the user.

At the end of the internship, there were 2 documents which handed over to the company. First was Requirement Analysis Document. It contained the list of all requirements started from functional requirements, non-functional requirements and the last was information requirements, which all of them were mentioned by the company supervisor and also by the internal people in DAF After Sales Department. This document had undergone several changes, in order to enable which requirements that the intern could fix for this assignment and the latest updated document was handed over to the company.

Second document was user manual. It was the most important document for the company. This document was made to guide internal people here use the application. It is also used by other DAF branches which want to use the application because the application is not only used by internal people in DAF After Sales Eindhoven, but also for other DAF branches.

6. CONCLUSION AND RECOMMENDATIONS

Since last year, DAF After Sales Department has a possibility to measure the click behavior of their web-based application, RAPIDO. Based on the data, they want to know the effectiveness and the efficiency of the RAPIDO usage. They need a system that can provide a graphic report to see which button are used most and less. The management report system enables the After Sales Department to store the log data into the database and also enables them to create report by monthly basis.

Some features are implemented in the system. These features are made to help people in After Sales Department to operate the log file data and create some reports of the RAPIDO usage automatically by monthly basis. The reports can be very useful for the management for the future analysis.

To conclude, the goals and the objectives of this project were achieved. The required things started from the application and also the documents were produced, revised and finally submitted to the company. Some changes and updates were made for the application to make it as perfect as possible. This project was developed by using time period management. The methodology used for this project was really helpful to realize the final product of this project, also with help and guidance by company and school supervisor.

As for the company (DAF Trucks) especially for After Sales Department, there are a few recommendations and suggestions related with the log file that they have. Perhaps with these recommendations, they can discuss about the log file later with the RAPIDO supplier, SXP. These are for the recommendations and suggestions:

- DAF After Sales Department should has a database of their dealers name and also for the IP address. So it must be clear for which dealers have access of RAPIDO.
- The log file which is provided by SXP is already well structured, but sometimes I found there are some missing data. For example, if the users expand the job so the job code must be recorded in the log file, but in case once or twice the job code is not recorded in the log file.
- Perhaps it will be better if SXP can add a field for the log file to make clearer of button that the user pressed. For example, when the user pressed “Technical Data” button, there should be another field to inform for which chassis number or the job code.
- SXP should add new information about the country where the DAF dealers come from.

Otherwise generally for the company (DAF Trucks) and personally for After Sales Department, I don't have any recommendations. They are already well-structured and supervised. Working in a real environment like in DAF Trucks was an unforgettable experience for me. I learned so many things, not only specifically for IT knowledge, but also for project management and documentation making. It was great to have opportunity to work in a multicultural company like DAF Trucks, because it also gave the opportunity to learn how to interact with various individuals and make acquaintances for each other.

7. EVALUATION

I was so glad having an opportunity to do my graduation internship in the big company, such as DAF Trucks. It was a great experience for me to gain a lot of knowledge working in a real environment. I learned a lot about IT knowledge, project management, time management and also for communication skill. This project made me so happy because it was related with database and also data analysis. I have interest with building a good database and some performance analysis to get a better future decision.

Within this project, I also expanded my knowledge about VBA programming that is integrated with Microsoft Access and Microsoft Excel. Honestly before this internship, I only had limited knowledge about VBA and now I have more knowledge about it. And for me, actually Microsoft applications have more than enough features for building a simple application.

While working on the project, there was a two-weekly meeting with the company supervisor to keep the project on the right track. It was more than enough for company supervisor to monitor the intern project. This technique is quite good to use for another intern while working on the internship or graduation project.

The project was successfully completed. It has solved the problem for DAF After Sales Department, to see the effectiveness of the RAPIDO usage. The report can be useful for the future analysis. I also provided them with a good documentation, so it can be easy to operate it. Even the application has solved the department's problem, it has successfully produced a report for the RAPIDO usage, but there is still a problem on it. The application that I built needs to take time for importing and deleting data. It also takes time for creating report and exporting it into excel file. It happens normally when using Microsoft Access as a database and also the user interface, but it is not a big problem. It also could be caused of the size of log file and exporting a lot queries. If I had more time to investigate of reducing the processing time, I am sure that I can help them to improve the application perhaps with some extra codings.

Overall, I was very proud of me that I can have opportunity to work in a big international company, such as DAF Trucks N.V. Even I faced difficulty of the language, because even DAF Trucks is an international company (child of American company) but most of the people are speaking Dutch. This made me quite difficult to get closer with people in DAF. For me it was not a big problem, it makes me want to study more about Dutch language even I know it is a difficult language. Another aspect that made me so happy is the company was satisfied with the result that I delivered to them. The project was quite interesting and they finally got the report that they wanted. I was also satisfied what I have done, it shows me that I have enough capability skill and knowledge to work in a real company. If there is a chance, I am definitely looking for an opportunity to be back in this company as a real employee!

BIBLIOGRAPHY

[1] DAF Intranet
<http://dafweb2.eu.paccar.com>

[2] DAF ePortal
<http://eportal.daf.com>

SDLC Theory:

[1] Russell Kay, *Quick Study: System Development Life Cycle*, May 14, 2002

[2] Wikipedia
<http://en.wikipedia.org>

Coding/Programming:

[1] Microsoft Website

1. <http://office.microsoft.com/en-us/access-help/make-a-query-ask-for-input-HA010341833.aspx>
2. <http://office.microsoft.com/en-001/access-help/using-parameters-with-queries-and-reports-HA001117077.aspx>

[2] Toolbox Website
http://it.toolbox.com/wiki/index.php/EXCEL_Chart_Type_Enumeration

[3] TechRepublic Website
<http://www.techrepublic.com/blog/msoffice/use-a-command-button-to-import-excel-data-to-an-access-table/376>

[4] eTutorials Website
<http://etutorials.org/Microsoft+Products/access/Chapter+12.+Automation/Recipe+12.6+Send+Access+Data+to+Excel+and+Create+an+Excel+Chart/>

[5] Stack Overflow Forum

1. <http://stackoverflow.com/questions/4567437/how-to-execute-a-query-in-ms-access-in-vba-code>
2. <http://stackoverflow.com/questions/11810843/setting-access-query-parameters-in-vba-code-access-newbie>
3. <http://stackoverflow.com/questions/9974250/access-query-to-excel-2010-to-create-a-graph-via-vba>

[6] Yahoo Tech Groups
http://tech.groups.yahoo.com/group/MS_Access_Professionals/message/96605

DECLARATION OF ORIGINALITY

of the Bachelor's thesis entitled:

Business Intelligence Management Report Using RAPIDO Log Data

Hereby I declare this submitted Bachelor's thesis, with the title as mentioned above, is absolutely original and I also declare that I personally have written this Bachelor's thesis.


In order to write this Bachelor's thesis I did the necessary investigations (as a part of my graduation project).

In case of the use of material not written by myself (parts of articles, reference books, graphs, etc.) I will indicate this material in my Bachelor's thesis. I will also state the sources of these contributions (author, name of the magazine, source of the graph, etc.) in the bibliography list (part of this Bachelor's thesis).

Date: June 10th 2013

Student name: Muhammad Rinaldi Darmawan

Student signature:



APPENDICES

APPENDIX I: PROJECT SURVEY



University of Applied Sciences

Appendix A : Graduation Project Survey HBO-ICT: English Stream

Data student:

Name student : Initials: **M.R.D.** Name: **Darmawan**

First name: **Muhammad Rinaldi** Studentnumber.: **2208598**

Telephone: **0618594865** E-mail: **murinda@yahoo.com**

Data company:

Name company/organisation: **DAF Trucks N.V.**

Visiting adress : **Hugo van der Goeslaan 1 / 5643 TW Eindhoven / The Netherlands**

Company mentor : Initials: **G** Name: **Claes**

Telephone: **0402142810** E-mail: **guus.claes@daftrucks.com**

Department/ position: **DAF Trucks N.V. / Manager Technical Information**

Startdate Graduation project : **4 February 2013**

Duo Graduation project : **Yes/ No**

If duo name of buddy:

Accepted by student: date:

signature:

Accepted by company: date: **08-01-13**

signature: **G. Claes**

Hand in date Graduation Project Survey:

Approved by graduation project coordinator ☒ yes/no

date: **15-1-2013**

signature: 

Remarks : _____

PLEASE SEND THIS FORM BY EMAIL TO THE INTERNSHIP COORDINATOR IMMEDIATELY AFTER THE INTERNSHIP INTERVIEW HAS TAKEN PLACE.

APPENDIX II: PROJECT PLAN

BUSINESS INTELLIGENCE MANAGEMENT REPORT USING RAPIDO LOG DATA

PROJECT PLAN

Muhammad Rinaldi Darmawan

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DOCUMENT CONTROL

Version Number	Implemented By	Revision Date	Approved By	Approval Date	Description of Change
1.0	Muhammad Rinaldi Darmawan				
2.0	Muhammad Rinaldi Darmawan	08-02-2013			Update the contents which is given a feedback from company supervisor
3.0	Muhammad Rinaldi Darmawan	21-02-2013			Project charter added and some revisions
4.0	Muhammad Rinaldi Darmawan	07-03-2013			Project charter addition

1. INTRODUCTION

1.1 Introduction to Parts and Service RAPIDO

Parts and Service RAPIDO is a web-based application for spare parts and service information system of commercial vehicle manufacturer DAF Trucks N.V. in Eindhoven, the Netherlands. The system has been developed and continuously extended by ServiceXpert throughout 15 years of collaboration with the Dutch commercial vehicle manufacturer.



Figure 1-1 DAF Portal Home Page

The system consists of 2 components, which provide daily updated automated after-sales information. The components are:

- **Parts RAPIDO**
It is DAF's electronic spare parts catalogue, where spare parts and special tools can be searched and ordered.

DAF
A PACCAR COMPANY

Language Settings: English

Parts Rapido 3.1.1

Search

Chassis No: 0E950000 Lookup

Regist Number: Reset

Vehicle type: XF105-FT XF105

Search Results

Vehicle Identification Data	
001	Chassis number 0E950000
080	VIN number XLRTE47MS0E950000
103	Series XF105
104	Vehicle type FT XF105
119	Type code G0509A
162	Market Group BINNAC0
217	Date/time password ECU 2013-04-18 09:26:30
117	Delivery address BTS GMBH
120	Specification week 201213

General Vehicle Data	
126	Engine power MV340KW
160	Basic engine execution BMOT.NM
165	Id Card Status D
121	Steering LHD
123	Cabin version SPACEXH
124	Wheel base VVB380
122	Exhaust emission EURO-5
125	Wheelplan & type 4X2E
102	Sales-ordernumber 046341
147	Countrycode 004
051	Transport number R3427
159	Type FT
127	Conlant STD KI M

Serial	
0100	Ecu
010	Volume fuel tank 850+430
114	Version 01
128	Rear overhang (AE) AE 0.99
216	Color code chassis C4P500GRY
0200	Unit dat standard
129	1st front axle type 152N
156	Front spring type PARBVVR
0300	Ecu data drive line
008	Rear axle 1 number 2FN333
132	Rear axle type AAS1347
133	Rear axle ratio 2.69
134	Differential lock MECBLAA
155	Rear spring type LUVACHT
0400	Ecu data ch / cab
002	Engine number A109197
137	Engine type MX
163	Service Interval OVT.STD
0500	El. inst., variants
004	Gear box number 00721500
140	Gearbox type 12S2300
0550	
054	Steering wheel lock nr C1NC03NMFR
0600	Param. mode to V40

Figure 1-2 Parts RAPIDO Home Page

- Service RAPIDO

It supports the service technician with vehicle-specific service information.

DAF
A PACCAR COMPANY

Language Settings: English

Service Country: The Netherlands

Service Rapido 3.1.1

Search

Chassis No: 0E950000 Lookup

Regist Number: Reset

Vehicle type: XF105-FT XF105

Search Results

- perform basic X service
 - check air pressure (Instrument panel)
 - open grille (Grille)
 - check level reservoir, clutch fluid (Clutch control, cab)
 - check air leakage (Air suppl brake syst)
 - check damage air suspension bellows
 - lift all air suspension bellows
 - check air suspension bellows (Suspens. driven axle)
 - lower all air suspension bellows
 - remove battery box cover (Battery box)
 - check earth connections (Electr. system, cab)
 - disconnect battery clamp, negative pole
 - check (Battery)
 - clean battery terminals (Battery)
 - check/fill level battery, wet, 12 volt (Battery)
 - install battery box cover (Battery box)
 - tilt cabin
 - check cabin
 - set cabin tilting pump (Tilting mech., cab)
 - apply cabin tilting pump (Tilting mech., cab)
 - check basic X service front axle beam (Axle beam, fr ax)
 - check shock absorber, axle suspension (Shock abs)
 - check damage ball joint (Track rod, fr axle 1)
 - check damage ball joint (Steering box)
 - check attachment anti-roll bar (Stabil. front axle 1)

Job title:	perform basic X service
Job code:	E 0000 000000 048 503
Time:	02:03 hh:mm 02:05 hours
Released:	22/02/2013 dd/mm/yy
Failure Location Code:	
NA Labor Operation Code:	

Job ID - 16041

Figure 1-3 Service RAPIDO Home Page

The newest version is RAPIDO 3.0. It has been rolled out June 2012 for PACCAR Parts in North America and the DAF Trucks N.V. headquarters in Eindhoven. Since August 2012 the RAPIDO 3.0 roll out by DAF Trucks N.V. continued successively for German speaking markets in Germany, Austria and Switzerland. Great Britain, the Benelux countries, Poland, Czech Republic, Hungary, Spain and Portugal as well as Italy and France will follow until the end of November 2012.

1.2 The Assignment

The Assignment is defined as “Business Intelligence Management Report using Parts and Service RAPIDO Log Data”.

It means that After Sales Department of DAF Trucks N.V. wants to know which dealers that are often accessing the system and which functions in the system are useful or useless. Actually now they think if their system works so good and has already improved their business process, but they still do not know if the system they use is effective and efficient or not. They want me to provide an information report to see about information regarding dealers accessing and how effective and efficient the functionalities in the system.

This project needs for 100 working days, and it will be spent for at least 8 hours per day. With information like that, hopefully the project is still kept on track. However there are some situations that can cause a delay for this project, such as illness or something unexpected problem.

This project plan will describe all planning to complete the project within next 100 working days. There will be the client of the project, people who are involved in this project, a whole project timeline schedule, possible risks that might be happened, and any other information regarding the planning to do for this project.

2. PROJECT STATEMENT

2.1 Formal Client

The purpose of this project is to give a management report to the manager of Technical Information, Training and Diagnostics in After Sales Department. Age Knossen as a manager of Technical Information, Training and Diagnostics will be the formal client. He wants to see the Parts and Service RAPIDO effectiveness by using an information report, such as a business intelligence dashboard. Besides that, the project is also used for internal people in sub department. They will act as stakeholder and also as end-user. See more details in Project Team at Appendix (Project Charter).

2.2 Project Leader

In this project, I will be the project leader. The project involves several parts from After Sales Department, such as Technical Information Manager, Functional Application Manager, Teamleader Parts & Jobs, Manager Service Information, Manager Service Training, Project Manager After Sales, DAVIE XDcll Running Business Manager, Manager Diagnostics, Manager Technical Information Training & Diagnostics and Parts Service Helpdesk. I have to manage how to have a good communication to them, I need collect the requirements from each of them.

2.3 Background and Current Situation

Parts and Service RAPIDO has already implemented in DAF Trucks since 15 years ago. They are still continuous updating the system with the latest information. People in After Sales Department of DAF Trucks always update the content. But the problem is they do not know about the effectiveness and the efficiency of the system. They do not know which part that they have to be more focus on.

2.4 Project Justification

After Sales Department of DAF Trucks N.V. provide a system for DAF'S dealers and always update the contents of the RAPIDO system, but they still do not know the effectiveness and the efficiency of RAPIDO system. People in After Sales Department, especially for the manager want to know how effective and efficient the dealers use the system. With a management report, they can know which parts that they have to be more focus on and which parts that they think are useless for the dealers.

2.5 Project Product

First thing to start this project it is absolutely needed a project plan. It describes the steps to complete this project. A good project plan will guide the steps very well.

The most important product for this project is the project report. It consists of two parts, the report for documentation and the visual report to make project client easy to see the result of the project. DAF Trucks needs a management report which provides information regarding performance of Parts and Service RAPIDO. It is much better to provide them a Business Intelligence Management Report for monitoring how effective and efficient the dealers using the system. With dashboard, it will be simple and easy to see how often the dealers access the system, which functions that are useless, which parts that the dealers usually open or use, etc.

Another product can be a document for analyzing user requirements for people in each part of the department. It describes what people in the department want for the final product soon.

2.6 Project Deliverables and Non-Deliverables

The whole project products for this project have to be delivered to the client. There are project plan, user requirements specification and project report. Probably me as a project leader has to give training for people in After Sales Department of DAF Trucks N.V. how to use the report to see performance of Parts and Service RAPIDO.

2.7 Project Constraints

The formal client demands a management which can provides any requirements that each part of the department wants. So the final product must be clear enough for all people who are involved in this project and it has to be finished in 100 days.

2.8 Project Risks

The hardest part that probably happened in this project is in the execution phase, where the prototype of Business Intelligence Management Report must be started to build. The process contains of processing the data from RAPIDO database system with OLAP or data mining method and then implements it into a good user friendly dashboard. So perhaps it will disturb the project plan that is already made, but it can be solved by understanding how to process data with OLAP data mining and also can ask school mentor about it.

3. PROJECT PHASING

Number	Activities	Week number of the year																				
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
		4 to 8 Feb	11 to 15 Feb	18 to 22 Feb	25 to 1 Mar	4 to 8 Mar	11 to 15 Mar	18 to 22 Mar	25 to 29 Mar	1 to 5 Apr	8 to 12 Apr	15 to 19 Apr	22 to 26 Apr	29 to 3 May	6 to 10 May	13 to 17 May	20 to 24 May	27 to 31 May	3 to 7 Jun	10 to 14 Jun	17 to 21 Jun	24 to 28 Jun
1	Preparation/Start-up																					
2	Getting basic knowledge of the Parts & Service Rapido																					
3	Define the main topic of the assignment																					
4	Collecting data from DAF database system																					
5	Collecting all requirements from each department/user																					
6	Research on DAF log data																					
7	Design a prototype																					
8	Testing the prototype																					
9	Revision and improvements																					
10	Creating the proposed product																					
11	Product testing																					
12	Product improvements and finishing																					
13	Final product																					

Table 3-1 Project Time line

This table describes the steps to do the project for each week. The steps consist of 5 steps, there are:

- Initiative Phase
- Definition and Design Phase
- Realization Phase
- Transfer Phase
- After-Care Phase

4. MANAGEMENT PLAN

Every project must have a management plan to achieve the best result on it. In this section it will describe management plan for the project based on 6 elements. There are money, skills, quality, information, time, organization.

4.1 Money

This project does not require money on it, because it does not need any special material. Building a dashboard as a main product can be done by free software. Perhaps for me as project leader needs money for housing and living cost, but it is already solved with fee and accommodation cost from DAF Trucks N.V.

4.2 Skills

First of all to start the project there must be a good project plan. It needs a good of documentation and planning method for the project. The project plan must be clear enough for all people who are involved in the project team. After that it is required skills to collect data and requirements from the important people in the department which are involved. It can be done by interview method for each people, so the requirements that they need are becoming clear.

For execution phase, it is required skills to analyze the database system and also some knowledge about data mining and OLAP.

4.3 Quality

To reach high quality for the final delivered result of the project, it must be a good coordination between project leader, project team, and project client. Me as project leader has to find out and analyze all requirements which will be given by project client. Project leader also has to make a good communication with the project team.

The project has to be in the right track based on the project plan to achieve the best result in the end. All components, especially for me as a Project Leader are high motivated to keep all deliverables in high quality.

4.4 Information

	Participant	Project Plan	Requirements Analysis Document	Project Report
Formal Client	Mr. Age Knossen	A, R	A, R	A, R
Project Leader	Muhammad Rinaldi Darmawan	Cr, Ar, S	Cr, Ar, S	Cr, Ar, S
Project Team				
Company Mentor	Mr. Guus Claes	Di	Di	Di
School Mentor	Mr. Ad Maas	Di	Di	Di

Table 4-1 Project Information

Index:

A : Archive
R : Receive
Cr : Create
Ar : Archive
S : Send
Di : Discuss

4.5 Time

In the management plan, time is the most important part to success the project. It has been described in project phasing section. It is already clear about the timeline of making the project, so it can be easy to understand what project team should do for making the project complete.

4.6 Organization

Between project client and project leader, this project involves other people from Parts Publications Department of DAF Trucks N.V. So the project team will consist of:

Name	Department	Role
Guus Claes	Manager Technical Information	Company Supervisor
Ad Maas	Fontys ICT Faculty Lecturer	School Supervisor
Muhammad Rinaldi Darmawan	Fontys ICT Faculty Student	The Intern/Project Leader
Joeri van Goudoever	Functional Application Manager	Stakeholder

Table 4-2 Project Team/Organization

APPENDIX III: PROJECT CHARTER

Business Intelligence Information Dashboard Using Stored RAPIDO Log Data

Details

Author : Muhammad Rinaldi Darmawan
Project number :

Date : February 22nd 2013
Status :

Motive

DAF After Sales Department wants to have a management report based on Parts and Service RAPIDO users log data to help them making a decision which activity that they have to be more focus on (users driven content).

Project description

The project is building a management report based on the stored RAPIDO log data. The purpose of the report will be giving an overview of how Parts and Service RAPIDO used. For this project, the tools that are going to be used are:

1. Microsoft Access 2010: This is used to make a RAPIDO log database and the user interface for the application
2. Microsoft Excel: This is used to provide graphic reports, such as pie chart, bar chart, etc.

Based on having interviews with internal people in DAF After Sales Department, they asked me to provide a report which contains all requirements that they requested. All requirements will be in the list below.

- Age Knossen

General

- The amount of dealers accessed per country
- The information that is useless or never used

- Coos Edzes

Parts RAPIDO

The usage of:

- Q1 Chassis No
- Q1 Engine No
- Q1 Vehicle Series
- Q1 Comp. Ref.
- Q1 Part No
- Q1 Competitor Reference
- Q2 Visual Search
- Q2 Main Group
- Q2 Part Search
- Q2 ID Card
- Q2 DAVIE

Service RAPIDO

- The usage of Technical Data
- The usage of Receiving Inspection button
- List top 10 of job name by Search For Name field
- The usage of Maintenance button
- The usage of Search Special Tools button
- The usage of Q1 Chassis No button
- The usage of Q1 Engine No button
- The usage of Q1 Vehicle Series button

- Romboud Siegmund

Parts RAPIDO

- The usage of Parts Bulletins button
- The list of part for the most frequently accessed in Parts Bulletins
- The usage of Mounting Instructions button
- The list of part for the most frequently accessed in Mounting Instructions

Service RAPIDO

- The list of tools for the most frequently accessed in Special Tools
- The usage of Technical Data button
- The list of part for the most frequently accessed in Technical Data

- The usage of Regulations, Instructions, Manuals button
- The list of part for the most frequently accessed in Regulations, Instructions, Manuals

General

- The most frequently way to search job, by accessed Parts RAPIDO first or directly go to Service RAPIDO
- The amount differences between external users and internal users
- The list of vehicle type for the most frequently searched
- The list of job code for the most frequently searched
- The list of strict language

• **Huib van de Berg**

Service RAPIDO

- The usage of Driver Documentation function in PDF Documentation Search button
- The usage of System & Component Information function in Q2 Search Documentation button
- The usage of Diagrams function in Q2 Search Documentation button

• **Mike van Nunen**

Parts RAPIDO

- The usage of Q2 ID Card function
- The usage of Q2 DAVIE Download function

Service RAPIDO

- The usage of DAVIE function in Q2 Search Documentation button
- The list of part for the most frequently accessed in DAVIE
- The usage of Diagnosis function in Q2 Search Documentation button
- The list of part for the most frequently accessed in Diagnosis
- The usage of System & Component Information in Q2 Search Documentation button
- The list of part for the most frequently accessed in System & Component Information

• **Wilfried Bijnen**

Service RAPIDO

- The usage of Q1 Chassis No Lookup
- The usage of Q1 Vehicle Series Lookup
- The usage of Vehicle Series function in PDF Documentation Search button
- The usage of Component Group function in PDF Documentation Search button
- The usage of ApplHeader Tis button
- The usage of ApplHeader Search Diagrams button
- The usage of Q2 Search Diagrams button
- The activities of the user in Q3 Documentation

• **Kristof Smets**

Service RAPIDO

- The usage of Technical Data
- The usage of DAVIE function in Q2 Search Documentation button
- The usage of Diagnosis function in Q2 Search Documentation button

- The list of data from Service RAPIDO which are in priority to migrate in DAVIE system

General

- The amount of dealers accessed per country
- The usage of Parts and Service RAPIDO
- The list of part that the dealers missed in the application
- The satisfaction of the dealers using the system

- Mark van Beek

Parts RAPIDO

- The usage of Parts Bulletins button
- The usage of Mounting Instructions button

Service RAPIDO

- The usage of ApplHeader PDF Documentation Search
- The usage of Driver Documentation in PDF Documentation Search
- The usage of Vehicle Series in PDF Documentation Search
- The usage of Component Group in PDF Documentation Search
- The usage of ApplHeader Regulations, Instructions, Manuals
- The usage of ApplHeader Technical Data, Generic
- The usage of ApplHeader Search Special Tools
- The usage of ApplHeader Tis
- The usage of ApplHeader Search Diagrams
- The usage of Q2 Job Information
- The usage of Q2 Search Documentation
- The list of part in Q2 Search Documentation

General

- The list of job code for the most frequently searched

- Guus Claes

Service RAPIDO

- The usage of Technical Data

- Max Skrivanek

Parts and Service RAPIDO

- The usage of views on each information module
- The categories related to vehicle series
- The categories related to vehicle age

- *The usage of the system based on period time (morning, afternoon, night)*

- *Service Manager (France)*

Parts RAPIDO

- *The*
 - *The usage of RAPIDO Message*
 - *The usage of Parts Bulletins*
 - *The usage of Parts RAPIDO*
-

Project
boundaries

There will be two parts for the project boundaries and it will be the scope or limitations of the project. There are information requirements limitations and general limitations.

1. *Information requirements limitations.*
This is the project limitations for information requirements based on data availability and the collected requirements from all internal people. This will be shown in the MoSCoW table (see appendix).

And this is the list of requirements that the intern is not able to do because the data is not available in stored RAPIDO log data file.

	Total
General	
The amount differences between external users and internal users	1
The list of strict language	1
The list of part that the dealers missed in the application	1
The satisfaction of the dealers using the system	1
The categories related to vehicle series	1
The usage of the system based on time period (morning, afternoon, noon, ...)	1
Parts RAPIDO	
<u>ApplicationHeader</u>	
The list of content for most frequently accessed:	
* Parts Bulletins	1
* Mounting Instructions	1
Service RAPIDO	
<u>ApplicationHeader</u>	
The list of content for most frequently accessed:	
* Special Tools	1
* Regulations, Instructions, Manuals	1
<u>Q2</u>	
The list of content for most frequently accessed:	

* Search For Name Field	1
<u>Q3</u>	
The activities of the user in Q3 Documentation	1
<u>Other</u>	
The list of data from Service RAPIDO which are in priority to migrate in DAVIE system	1

2. General limitations.

Element	Included	Excluded
<i>The management report will be based on stored RAPIDO log data from March 2012 – January 2013.</i>	<i>Included</i>	
<i>The management report only contains information which is in the scope.</i>	<i>Included</i>	
<i>Project report and documents</i>	<i>Included</i>	
<i>The management report compatible with future system, needs & requirements</i>		<i>Excluded</i>
<i>New features/updates for the extra information outside the information requirements limitations.</i>		<i>Excluded</i>
<i>Tools used are:</i> <ul style="list-style-type: none"> <i>Microsoft Access 2010: Database and user interface of application</i> <i>Excel: Graphic report</i> 	<i>Included</i>	

Goal and result

The objective for this project is to provide DAF After Sales Department an management report based on stored RAPIDO log data from March 2012 until January 2013, which the report will contain information about the usage of Parts and Service RAPIDO and based on the usage define the users driven content. From that report, it can gives some overviews for internal people to define what activity or what the future information which can be useful for the users.

Output in project phases and deliverables

Deliverables from:	Year / Week
• Initiative Phase	Feb 4 th 2013 – Mar 1 st 2013
• Definition and Design Phase	Feb 25 th 2013 – Apr 5 th 2013
• Realization Phase	Apr 8 th 2013 – May 17 th 2013
• Transfer Phase	May 20 th 2013 – Jun 14 th 2013
• After-Care Phase	Jun 17 th 2013 – Jun 28 th 2013

For the detail steps to do the project per each week, it will be described in the table below.

		Week number of the year																									
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					
Number	Activities	4 to 8 Feb	11 to 15 Feb	18 to 22 Feb	25 to 1 Mar	4 to 8 Mar	11 to 15 Mar	18 to 22 Mar	25 to 29 Mar	1 to 5 Apr	8 to 12 Apr	15 to 19 Apr	22 to 26 Apr	29 to 3 May	6 to 10 May	13 to 17 May	20 to 24 May	27 to 31 May	3 to 7 Jun	10 to 14 Jun	17 to 21 Jun	24 to 28 Jun					
1	Preparation/Start-up																										
2	Getting basic knowledge of the Parts & Service Rapido																										
3	Define the main topic of the assignment																										
4	Collecting data from DAF database system																										
5	Collecting all requirements from each department/user																										
6	Research on DAF log data																										
7	Design a prototype																										
8	Testing the prototype																										
9	Revision and improvements																										
10	Creating the proposed product																										
11	Product testing																										
12	Product improvements and finishing																										
13	Final product																										

Project team
and capacity

Name	Department	Role	Average weekly capacity	Necessary capacity in a period ¹⁾
Guus Claes	Manager Technical Information	Company Supervisor	8 hours/week	Feb 4 th 2013 – Jun 28 th 2013
Ad Maas	Fontys ICT Faculty Lecturer	School Supervisor	4 hours/week	Feb 4 th 2013 – Jun 28 th 2013
Muhammad Rinaldi Darmawan	Fontys ICT Faculty Student	The Intern/Project Leader	36 hours/week	Feb 4 th 2013 – Jun 28 th 2013
Joeri van Goudoever	Functional Application Manager	Stakeholder	5 hours/week	Feb 4 th 2013 – Jun 28 th 2013

¹⁾ from year/week to year/week

Project related

CAB (Change Advisory Board) RAPIDO

Changes on the RAPIDO application that could have influence for the log data should be addressed. In this case, Mr. Joeri, as a functional application manager needs to inform the intern.

Risks

Risk	Control plan	Responsible
External Supplier	SXP as an external supplier of RAPIDO logged functions, may have a new project of modifying logged functions in RAPIDO	Functional Application Manager has to inform and make an agreement with the intern if there is a change in the RAPIDO logged functions
Data Sources	For example data is not available for a month, so it can't be processed	Functional Application Manager has to inform the available log data for every month
Project Team	Project team can't support the intern to do the project any time and it can delay the project	It can be solved by having an agreement which is already mentioned on average weekly capacity for project team
Project Related	Project related issues which are not communicated with the intern will be a risk for data and project	The intern has to be informed if there is another project which can interrupt the process of doing the project

[Authorisation
project start](#)

Project sponsor	Problem owner	Project manager

[Appendix](#)

MoSCoW Table

Service RAPIDO:

Information Requirements	M	S	C	W
Service RAPIDO				
<u>Application Header</u>				
Log total clicks on all Application Header buttons total	X			
Log total clicks on all Application Header buttons per country				
Log total clicks on all Application Header buttons per user	X			
<u>Chassis combinations</u>				
Log total clicks on Chassis Lookup total	X			
Log total clicks on Chassis Lookup per country				
Log total clicks on Chassis Lookup per user	X			
Log total clicks on Visual Search button total	X			
Log total clicks on Visual Search button per country				
Log total clicks on Visual Search button per user	X			
Log total clicks on Search Wizard button total	X			
Log total clicks on Search Wizard button per country				
Log total clicks on Search Wizard button per user	X			
Log total clicks on Receiving Inspection button total	X			
Log total clicks on Receiving Inspection button per country				

Log total clicks on Receiving Inspection button per user	X			
Log total clicks on Maintenance button total	X			
Log total clicks on Maintenance button per country				
Log total clicks on Maintenance button per user	X			
Log total clicks on Job Code Search button total	X			
Log total clicks on Job Code Search button per country				
Log total clicks on Job Code Search button per user	X			
Log total clicks on Search For Name total	X			
Log total clicks on Search For Name per country				
Log total clicks on Search For Name per user	X			
Log total clicks on Q2 Search Documentation total	X			
Log total clicks on Q2 Search Documentation per country				
Log total clicks on Q2 Search Documentation per user	X			
Log total clicks on Q2 Technical Data total	X			
Log total clicks on Q2 Technical Data per country				
Log total clicks on Q2 Technical Data per user	X			
<u>Engine No</u>				
Log total clicks on Engine Lookup total	X			
Log total clicks on Engine Lookup per country				
Log total clicks on Engine Lookup per user	X			
<u>Search for Vehicle Series</u>				
Log total clicks on Search for Vehicle Series Lookup total + specific vehicle type	X			
Log total clicks on Search for Vehicle Series Lookup per country + specific vehicle type				
Log total clicks on Search for Vehicle Series Lookup per user + specific vehicle type	X			
Log total clicks on Search for Vehicle Series Lookup + documentation type total (specific vehicle type)				

Log total clicks on Search for Vehicle Series Lookup + documentation type per country (specific vehicle type)				
Log total clicks on Search for Vehicle Series Lookup + documentation type per user (specific vehicle type)				
<u>Job Code Search</u>				
Overview of all job numbers that have been looked up	X			
Log total clicks on all Q4 Job Header buttons	X			
Log total clicks on all Q4 Job Header buttons + job code				

Parts RAPIDO:

Information Requirements	M	S	C	W
<i>Parts RAPIDO</i>				
<u>Application Header</u>				
Log total clicks on all Application Header buttons total	X			
Log total clicks on all Application Header buttons per country				
Log total clicks on all Application Header buttons per user	X			
<u>Q1 Search Buttons</u>				
Log total clicks on Chassis Lookup total	X			
Log total clicks on Chassis Lookup per country				
Log total clicks on Chassis Lookup per user	X			
Log total clicks on Engine Lookup total	X			
Log total clicks on Engine Lookup per country				
Log total clicks on Engine Lookup per user	X			
Log total clicks on Search for Vehicle Series Lookup total + specific vehicle type	X			
Log total clicks on Search for Vehicle Series Lookup per country + specific vehicle type				
Log total clicks on Search for Vehicle Series Lookup per user + specific vehicle	X			

type				
Log total clicks on Component Ref total	X			
Log total clicks on Component Ref per country				
Log total clicks on Component Ref per user	X			
Log total clicks on Part No total	X			
Log total clicks on Part No per country				
Log total clicks on Part No per user	X			
Log total clicks on Competitor Reference total	X			
Log total clicks on Competitor Reference per country				
Log total clicks on Competitor Reference per user	X			
Log total clicks on TRP total	X			
Log total clicks on TRP per country				
Log total clicks on TRP per user	X			
Log total clicks on TRP UK total	X			
Log total clicks on TRP UK per country				
Log total clicks on TRP UK per user	X			
Log total clicks on Accessories total	X			
Log total clicks on Accessories per country				
Log total clicks on Accessories per user	X			
Log total clicks on Assortments total	X			
Log total clicks on Assortments per country				
Log total clicks on Assortments per user	X			
<u>Q2 Buttons</u>				
Log total clicks on Visual Search button total	X			
Log total clicks on Visual Search button per country				
Log total clicks on Visual Search button per user	X			

Log total clicks on Main Group button total	X			
Log total clicks on Main Group button per country				
Log total clicks on Main Group button per user	X			
Log total clicks on ID Card button total	X			
Log total clicks on ID Card button per country				
Log total clicks on ID Card button per user	X			
Log total clicks on DAVIE Download button total	X			
Log total clicks on DAVIE Download button per country				
Log total clicks on DAVIE Download button per user	X			
<u>Specific Parts Lookup</u>				
Total amount of jobs which are looked up through Parts RAPIDO + job list				
Total amount of technical data pressed through Parts RAPIDO	X			
<u>Parts Viewer</u>				
Log total clicks on Parts Bulletins button total + part number	X			
Log total clicks on Parts Bulletins button per country + part number				
Log total clicks on Parts Bulletins button per user + part number	X			
Log total clicks on Assortments button total + part number	X			
Log total clicks on Assortments button per country + part number				
Log total clicks on Assortments button per user + part number	X			

APPENDIX IV: REQUIREMENTS ANALYSIS DOCUMENT

BUSINESS INTELLIGENCE MANAGEMENT REPORT USING RAPIDO LOG DATA

REQUIREMENT ANALYSIS DOCUMENT

Muhammad Rinaldi Darmawan

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1. INTRODUCTION

1.1 Purpose of A Requirements Analysis

This requirements analysis document (RAD) is made to encompass activities related defining needs or requirements for a new project. It usually takes place after receiving a request from project client. This document will describe all activities and processes of gathering information about business and technical requirements. The purposes of this document are to support a request from project client, to consolidate the information into a cohesive document, and to assist the stakeholders in prioritizing the needs and condition.

Requirements analysis document is critical to the success of the project and can be a communication between a client and a vendor. All of requirements who are already gathered from the client will be documented and written in this document. It must be actionable, testable, related to identified business needs and defined to a level of detail sufficient for the design of the project.

1.2 The Audience

The audience for this project actually is same with the organization which is already mentioned in project plan document. Me, as a project leader will be fully responsible for this project. The clients will be people in internal of DAF After Sales Department. There will be:

Manager Technical Information Training & Diagnostics	Age Knossen
Manager Technical Information	Guus Claes
Teamleader Parts & Jobs	Coos Edzes
Teamleader Parts & Jobs	Romboud Siegmund
Manager Service Information	Wilfried Bijnen
Manager Service Training	Huub van den Berg
Project Manager After Sales	Max Skrivaneck
DAVIE XDcll Running Business Manager	Mike van Nunen
Manager Diagnostics	Kristof Smets
Parts and Service RAPIDO Help Desk	Mark van Beek

Table 1-1 The Audience of The Project

1.3 Brief Overview of The RAD Process

Based on concept, the activities of requirements analysis will be in 3 phases, including:

- 1) Preparing to conduct a RAD
In this phase, project leader makes a preparation for analyzing request and make a list of stakeholders who will be involved in the project.
- 2) Eliciting business and technical requirements
This phase, project leaders starts to collect requirements or needs from stakeholders and project client. The used techniques are having interview with the clients and having observation with the available data from the company.
- 3) Recording and scoring requirements
After collecting all requirements from all clients, project leader start to make a documentation of the requirements analysis. Besides that, project leader also has to define requirements in addition to create and calculate ranks, weights, and overall scores used to help prioritize requirements.

Each phase is largely dependent upon successful completion of previous. So it will be dependent activity for each phase.

2. PREPARING TO CONDUCT A RAD

2.1 Documentation of The Purpose, Circumstances, and Scope of The Request

This RAD is based on request of internal people in DAF After Sales Department, to build a new application or report for knowing the usage effectiveness and efficiency of the existing system they use. This document is written to make it clear of communication between the project leader and the stakeholders who are involved. The project leader can visually make a documentation of the requirements requests from the clients and the clients can know what they may achieve from project leader's action.

The other important point for this document is the purpose and benefits that will be achieved as a result of the request. In the end of the project phase, it will be a final product such as a business intelligence dashboard for helping clients to make a decision of their business process. If all requests can be achieved in the final product, so all of the clients' needs are also achieved too. The final product can give some advices for the clients, which are internal people of DAF After Sales Department, analyze how effective and efficient the usage of the existing system for their dealers.

The scope of this request includes giving an information report for the clients based on the available log data from the company. The specific explanation of each request from each person will be mentioned in business and technical requirements later.

2.2 Stakeholder Identification

Stakeholder identification is a tool to help the project team understand basic information about the organization, its relationship, with the request, and a means to guide an initial business transformation approach, especially relating to potential communication and mobilization and alignment needs. Stakeholders are listed in the table below.

Stakeholder Name	Position	Critical Success Factors
Age Knossen	Manager Technical Information Training and Diagnostics	Making Parts and Service RAPIDO report based the requested requirements
Guus Claes	Manager Technical Information	Making Parts and Service RAPIDO report based the requested requirements
Coos Edzes	Teamleader Parts and Jobs	Making Parts and Service RAPIDO report based the requested requirements
Romboud Siegmund	Teamleader Parts and Jobs	Making Parts and Service RAPIDO report based the requested requirements
Wilfried Bijnen	Manager Service Information	Making Parts and Service RAPIDO report based the requested requirements
Huib van de Berg	Manager Service Training	Making Parts and Service RAPIDO report based the requested requirements
Max Skrivanek	Project Manager After Sales	Making Parts and Service RAPIDO report based the requested requirements
Mike van Nunen	DAVIE XDcll Running Business Manager	Making Parts and Service RAPIDO report based the requested requirements
Kristof Smets	Manager Diagnostics	Making Parts and Service RAPIDO report based the requested requirements
Joeri van Goudoever	Functional Application Manager	Making Parts and Service RAPIDO report based the requested requirements and act as an administrator for the application
Mark van Beek	Parts and Service RAPIDO Help Desk	Making Parts and Service RAPIDO report based the requested requirements

Table 2-1 Stakeholder Identification

3. BUSINESS AND TECHNICAL REQUIREMENTS

3.1 Fact-Finding Results

This section will describe the approach activities regarding the way to gather information requirements, including references that the project leader used and techniques of requirements gathering.

3.1.1 References Used

There are several documents from DAF Trucks N.V. for helping project leader to analyze business and technical requirements for the project. The references used are listed in table below:

Document Reference Name	Reference Author	Date of Reference	Reference Location
RapidoLogging-FullSpecv3	Joao Henriques (ServiceXpert GmbH)	03-12-2010	-
Rapido in figures	-	-	-

Table 3-1 References Used

3.1.2 Requirements Gathering Techniques Used

There are so many techniques that project leader can use to get all requirements that the clients want. These are the list of techniques that the project leader has already implemented to collect requirements from the clients:

Requirements Gathering Technique	Date/s Administered	Name of Participants	Name of Facilitator/ Decision Maker
Data Observation		Project Leader	Joeri van Goudoever
Interview		Project Leader & All Clients	All Clients

Table 3-2 Requirements Gathering Techniques Used

3.2 Business Functional, Non-Functional, Information and Technical Requirements

Based on requirements information which the project leader can collect, there will be two kinds of requirements. There are business functional requirements and technical requirements.

3.2.1 Business Functional Requirements

In business functional requirements, these are the list of functional requirements which are definitely included along with the application. There are:

Functional Requirements	M	S	C	W
Manage data into database (add, update, delete)	X			
Making standard Parts RAPIDO report	X			
Making standard Service RAPIDO report	X			
Change administrator authentication	X			

Table 3-3 Functional Requirements

3.2.2 Business Non-Functional Requirements

In business non-functional requirements, these are the list of non-functional requirements which are probably being brought along with the application. There are:

Non-Functional Requirements	M	S	C	W
Acceptable responses time (loading data, making report)	X			
Not too man dependent	X			
Administrator user	X			
Fit within budget	X			

Table 3-4 Non-Functional Requirements

3.2.3 Business Information Requirements

In business information requirements, these are the list of information requirement which will be shown in the report. There will be into 2 parts, Parts RAPIDO information requirements and Service RAPIDO information requirements.

Service RAPIDO information requirements:

Information Requirements	M	S	C	W
Service RAPIDO				
<u>Application Header</u>				
Log total clicks on all Application Header buttons total	X			
Log total clicks on all Application Header buttons per country				
Log total clicks on all Application Header buttons per user	X			
<u>Chassis combinations</u>				
Log total clicks on Chassis Lookup total	X			
Log total clicks on Chassis Lookup per country				
Log total clicks on Chassis Lookup per user	X			
Log total clicks on Visual Search button total	X			
Log total clicks on Visual Search button per country				
Log total clicks on Visual Search button per user	X			
Log total clicks on Search Wizard button total	X			
Log total clicks on Search Wizard button per country				
Log total clicks on Search Wizard button per user	X			
Log total clicks on Receiving Inspection button total	X			
Log total clicks on Receiving Inspection button per country				
Log total clicks on Receiving Inspection button per user	X			
Log total clicks on Maintenance button total	X			
Log total clicks on Maintenance button per country				

Log total clicks on Maintenance button per user	X			
Log total clicks on Job Code Search button total	X			
Log total clicks on Job Code Search button per country				
Log total clicks on Job Code Search button per user	X			
Log total clicks on Search For Name total	X			
Log total clicks on Search For Name per country				
Log total clicks on Search For Name per user	X			
Log total clicks on Q2 Search Documentation total	X			
Log total clicks on Q2 Search Documentation per country				
Log total clicks on Q2 Search Documentation per user	X			
Log total clicks on Q2 Technical Data total	X			
Log total clicks on Q2 Technical Data per country				
Log total clicks on Q2 Technical Data per user	X			
<u>Engine No</u>				
Log total clicks on Engine Lookup total	X			
Log total clicks on Engine Lookup per country				
Log total clicks on Engine Lookup per user	X			
<u>Search for Vehicle Series</u>				
Log total clicks on Search for Vehicle Series Lookup total + specific vehicle type	X			
Log total clicks on Search for Vehicle Series Lookup per country + specific vehicle type				
Log total clicks on Search for Vehicle Series Lookup per user + specific vehicle type	X			
Log total clicks on Search for Vehicle Series Lookup + documentation type total (specific vehicle type)				
Log total clicks on Search for Vehicle Series Lookup + documentation type per country (specific vehicle type)				
Log total clicks on Search for Vehicle Series Lookup + documentation type per user (specific vehicle type)				
<u>Job Code Search</u>				
Overview of all job numbers that have been looked up	X			
Log total clicks on all Q4 Job Header buttons	X			
Log total clicks on all Q4 Job Header buttons + job code				

Table 3-5 Service RAPIDO Information Requirements

Parts RAPIDO information requirements:

Information Requirements	M	S	C	W
<u>Parts RAPIDO</u>				
<u>Application Header</u>				
Log total clicks on all Application Header buttons total	X			
Log total clicks on all Application Header buttons per country				
Log total clicks on all Application Header buttons per user	X			
<u>Q1 Search Buttons</u>				
Log total clicks on Chassis Lookup total	X			
Log total clicks on Chassis Lookup per country				
Log total clicks on Chassis Lookup per user	X			
Log total clicks on Engine Lookup total	X			
Log total clicks on Engine Lookup per country				

Log total clicks on Engine Lookup per user	X			
Log total clicks on Search for Vehicle Series Lookup total + specific vehicle type	X			
Log total clicks on Search for Vehicle Series Lookup per country + specific vehicle type				
Log total clicks on Search for Vehicle Series Lookup per user + specific vehicle type	X			
Log total clicks on Component Ref total	X			
Log total clicks on Component Ref per country				
Log total clicks on Component Ref per user	X			
Log total clicks on Part No total	X			
Log total clicks on Part No per country				
Log total clicks on Part No per user	X			
Log total clicks on Competitor Reference total	X			
Log total clicks on Competitor Reference per country				
Log total clicks on Competitor Reference per user	X			
Log total clicks on TRP total	X			
Log total clicks on TRP per country				
Log total clicks on TRP per user	X			
Log total clicks on TRP UK total	X			
Log total clicks on TRP UK per country				
Log total clicks on TRP UK per user	X			
Log total clicks on Accessories total	X			
Log total clicks on Accessories per country				
Log total clicks on Accessories per user	X			
Log total clicks on Assortments total	X			
Log total clicks on Assortments per country				
Log total clicks on Assortments per user	X			
<u>Q2 Buttons</u>				
Log total clicks on Visual Search button total	X			
Log total clicks on Visual Search button per country				
Log total clicks on Visual Search button per user	X			
Log total clicks on Main Group button total	X			
Log total clicks on Main Group button per country				
Log total clicks on Main Group button per user	X			
Log total clicks on ID Card button total	X			
Log total clicks on ID Card button per country				
Log total clicks on ID Card button per user	X			
Log total clicks on DAVIE Download button total	X			
Log total clicks on DAVIE Download button per country				
Log total clicks on DAVIE Download button per user	X			
<u>Specific Parts Lookup</u>				
Total amount of jobs which are looked up through Parts RAPIDO + job list				
Total amount of technical data pressed through Parts RAPIDO	X			
<u>Parts Viewer</u>				
Log total clicks on Parts Bulletins button total + part number	X			
Log total clicks on Parts Bulletins button per country + part number				
Log total clicks on Parts Bulletins button per user + part number	X			
Log total clicks on Assortments button total + part number	X			
Log total clicks on Assortments button per country + part number				

Log total clicks on Assortments button per user + part number	X			
---	---	--	--	--

Table 3-6 Parts RAPIDO Information Requirements

4. USE-CASES

4.1 Manage Data into Database (Add, Update, Delete)

Description and Priority

Every month there is new input of log file from Parts and Service RAPIDO. Before the user make a report, the admin has to import new log files and delete the old log files to make the size of the database stable.

Use Case Load New Data

Use Case:	Load and record new data
Precondition:	Application is started
Main Success Scenario:	
<ol style="list-style-type: none"> 1. User clicks the button 'Import Data'. 2. User selects the path of the data sources file. 3. Users select the table destination in the database. 4. User can presses 'OK' button to import data and access progress bar will be appeared in right bottom page. 	
Post - condition:	Application is ready to use and data is imported

Table 4-1 Use Case Load New Data

Use Case Delete Old Data

Use Case:	Delete old data
Precondition:	Application is started
Main Success Scenario:	
<ol style="list-style-type: none"> 1. User put the range date first in the textbox for which data will be deleted. 2. User clicks the button 'Delete Data'. 3. Access progress bar will be appeared in right bottom page. 	
Post - condition:	Data is deleted

Table 4-2 Use Case Delete Old Data

4.2 Making Standards Parts RAPIDO Report

Description and Priority

Parts RAPIDO report contains all information requirements for Parts RAPIDO application. The output of the report will be in Microsoft Excel with also the graph automatically added. Normal user can only put the range of the date for monthly based report.

Use Case

Use Case:	Parts RAPIDO Report
Precondition:	Application is started, new data is imported, and user clicks the button 'Parts RAPIDO'
Main Succes Scenario:	
<ol style="list-style-type: none"> 1. User input the date within the range database for monthly based report. 2. User clicks the button 'Parts RAPIDO'. 3. User select the path file to be saved. 	

4. Access exporting progress bar will be appeared in right bottom page.
5. Microsoft Excel report will be appeared automatically with table and graph automatically added
Post - condition: Parts RAPIDO report made

Table 4-3 Use Case Making Parts RAPIDO Report

4.3 Making Standards Service RAPIDO Report

Description and Priority

Service RAPIDO report contains all information requirements for Service RAPIDO application. The output of the report will be in Microsoft Excel with also the graph automatically added. Normal user can only put the range of the date for monthly based report.

Use Case

Use Case:	Service RAPIDO Report
Precondition:	Application is started, new data is imported, and user clicks the button 'Service RAPIDO'
Main Succes Scenario:	<ol style="list-style-type: none"> 1. User input the date within the range database for monthly based report. 2. User clicks the button 'Service RAPIDO'. 3. User select the path file to be saved. 4. Access exporting progress bar will be appeared in right bottom page. 5. Microsoft Excel report will be appeared automatically with table and graph automatically added
Post - condition:	Service RAPIDO report made

Table 4-4 Use Case Making Service RAPIDO Report

5. NON-FUNCTIONAL REQUIREMENTS

- **Acceptable response times**

Acceptable for importing data is around 10 minutes for 1 month data and for making report around less than 5 minutes.

- **Not too man dependent**

The application is easy to operate and the report is easy to understand. So in case if the administrator is not available, other people can operate the application (user manual can also help the user to understand the system works).

- **Administrator user**

There is an authentication needed for the administrator to manage some functions in the application.

- **Fit within budget**

The project must fits within the available budget.

6. USER DOCUMENTATION

The user of this application will receive user manual document. This document is used to help user operate the application



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