OPERATING LEASE SUPPORT SYSTEM DEVELOPMENT

FOR

DIPO STAR FINANCE
Solusi Kredit Otomotif Terpercaya

Functional Specification
A.2 Maintenance Module

Revision 3.0

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Document Approval

By signing this document I acknowledge I have read the document and give the Project Management Team approval to proceed.

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1   Introduction

1.1   Purpose

Functional specification is to explain some of the following:
1)   Describe who uses your application or system,
2)   Describe the order in which steps or events or on the scenario are performed,
3)   Show user interface design, and
4)   What kind of data that will be maintained by functions.

1.2   Scope

Marketing module described about how to maintain data transaction on the marketing process which is utilized by functions in the system. On this module there's no integration with another system (such as ACA and MFAPPL). This modules deal in the "to-be design" for developing the new system.

To keep the accuracy of entire design of the system we are using modeling approach for design and analysis. ***To define a model of functions we will determine use cases. In the use case, it can summarize who uses your application or system, and what they can do with it.***

Within a use case we can determine which use cases are supported by application. We can create use case diagram, activity diagram, use case scenario, data structure, and interface design.

A data structure can be specified what kind of information that will be required for the system. Data structure is represented database design of the system. A user interface design can imagine the user about the system as visual. User interface is designed based on prototypes which have been already created. And, based on these things, we will develop the system.

The following is functionality of Maintenance module:

✓   Service History Inquiry

a.   Add new service history records
To input a new service history records by fill out the form. This feature allows a user to save a data into database, after input on the service history record form.
b.   Update details service history records
To update a detail service history records by fill out the details form. This feature allows a user to changes any data, and then saves into database.
c.   Filter and sort agreement information
On this feature the record can be filtered and sorted based on columns on top of the list.
d.   Delete service history records
Delete a record of service history on the list. Only status draft can be deleted.
e.   Validate service history records
After the records was confirm, the record can be to validate.
f.   Set to draft service history records
If the data still need to be update by user who initiate to create the agreement, the records can be set to draft.

1.3   Acronyms and abbreviations

➢   ACA   : Auto Credit Approval System

➢   MFAPPL : Multi Finance Application

1.4   References

This functional scope refers "to be design" in the section A.1.Marketing Module.

2   Detail Specification

2.1   Service History Inquiry

2.1.1   Use case

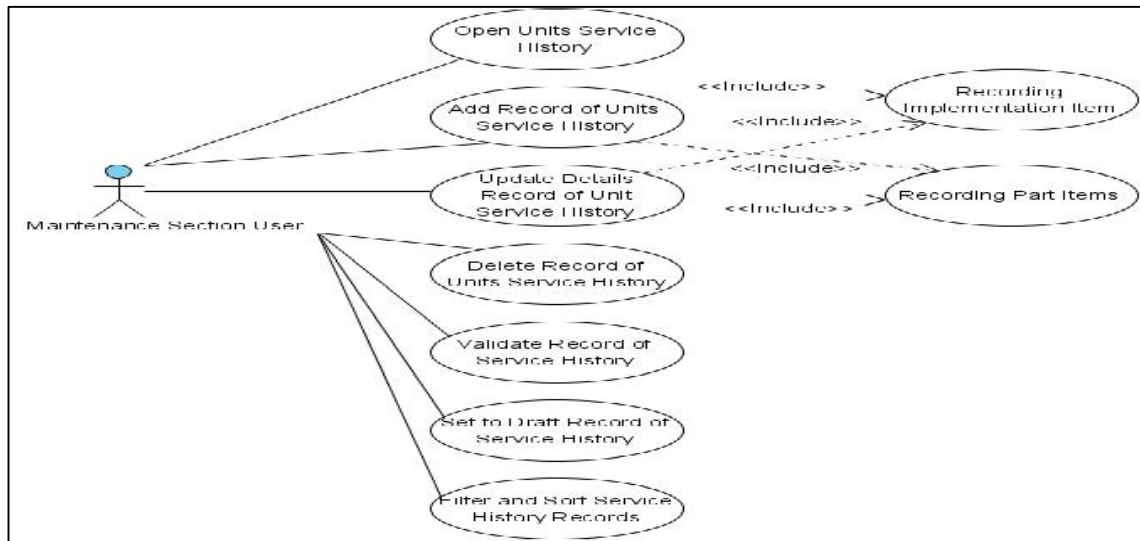The figure below is summarizing who uses features of function, and what they can do with it.

Figure 1 – Use case diagram of Service History Inquiry

2.1.2   Operations and scenarios

The figure below is describing operations or steps performed in a function interact with people (flow of work between actors and the system).
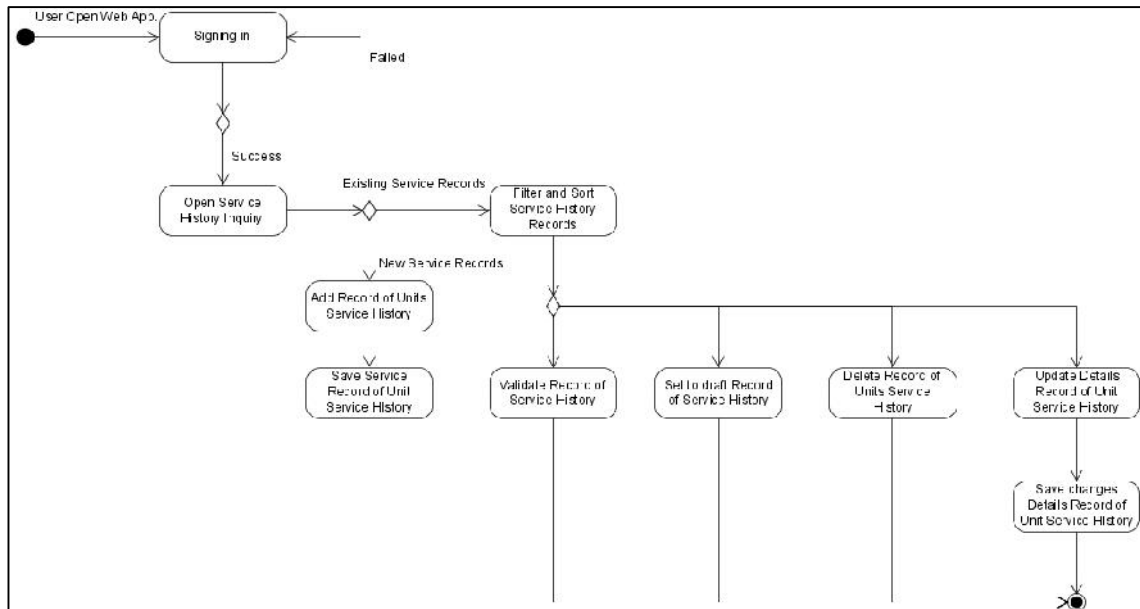

Figure 2 – Activity diagram of Service History Inquiry

No.	Steps/ Operations	Actor/ People	Scenario
1	Signing in	Maintenance Section User	• Actor fills out sign in form by inputting user name and password. • Actor clicks [sign in] button. System will check the account of user; if user account is already registered user will enter into the system. If doesn't user can return the step.
2.	Open service history inquiry module	Maintenance Section User	• After login, actor can open service history inquiry module on the menu of system. After that, screen of service history inquiry will open.
3.	Add new service history record	Maintenance Section User	• If service history screen opens, actor can determined the agreement number and police number that want to be add the service history record. • Upon clicking […] button on the agreement number fields, the agreement look-up screen will be displayed. Agreement number can be selected (only one record can be select). After it's done, agreement information field will be filled automatically. • After determined agreement number, actor can determine the police number by clicking […] button on the police number field. The Units (Object Lease) look-up screen will be displayed. Police number can be selected (only one record can be select). After it's done, unit's information field will be filled automatically. • After determining agreement number and police number, user can click [Add] button to add new service history record. Once it done, 'Add' screen will be displayed. • On 'Add' screen open, general information of service can be views. To input service history details, actor should input several fields, such as; type of service, service date, actual mileage and workshop. Once it done, service record history can be saved as draft by clicking [Save as Draft] button. • If service history records already drafted, actor can add main implementation item and parts item by clicking [Add] button, and then input the data's. • The mandatory fields cannot be blank.
4.	Save service history records as draft	Maintenance Section User	• After filling out the fields, actor can click [save as draft] button, if want to make a records as **draft**. • After that, system will proceed to store a data into database and will automatically check a validity of data (such as; data type, mandatory data, and data length) • If done, actor can click [Back] button to return to the main screen.
5.	Filter and sort service history records	Maintenance Section User	• Actor can filter and sort the record based on columns where displayed on the list.

			• To filter the records, actor can enter keywords into the filter fields. If matched data founds, the filtered result will be displayed on list. If doesn't the list will be empty. • To sort the records, actor can click header of column on the list table. After that the records will be sorted by ascending or descending, alternately. • Upon select [record number filter] drop down list, actor can select a records number to display on the list. At least only one item can be selected.
6.	Update service history record	Maintenance Section User	• If service history screen opens, actor can determined the agreement number and police number that want to be display in the service history. • Upon clicking [...] button on the agreement number fields, the agreement look-up screen will be displayed. Agreement number can be selected (only one record can be select). After it's done, agreement information field will be filled automatically. • After determined agreement number, actor can determine the police number by clicking [...] button on the police number field. The Units (Object Lease) look-up screen will be displayed. Police number can be selected (only one record can be select). After it's done, unit's information field will be filled automatically. • After determining agreement number and police number, user can click [Details] button to edit the details of service history record. Once it done, 'Details' screen will be displayed. • If 'Details' screen opens, actor can edit a record by inputting a data on each of the fields. • The mandatory fields cannot be blank.
7.	Delete a service history record	Maintenance Section User	• Actor can delete the record of service history that display on the list. Only data with status draft can be deleted.
8.	Validate service history record	Maintenance Section User	• Once data is saved and data has been confirmed, actor can validate the record by clicking [Validate] button. • After that system will set a record as **validate (or not draft).** • If done, actor can click back button to return to the list of service history.
9.	Set to draft of service history	Maintenance Section User	• To do this process, actor should open detail screen by clicking [Details] button on the list. Once it open, actor can set to draft by clicking [set to draft] button. If the records still need to revise and status still not valid yet, actor can change the record status from **validated** to **draft**. • After that, system will proceed automatically to change the status, and actor can click [Back] button to return to the list.

2.1.3   Status management and roles

The figure below is describing a role matrix (including relation with Status) of actor that already identified in a function.

Role of Actor	Filter and sort	Save as draft	Save changes (draft)	validate	Validate
Maintenance user	Yes	Yes	Yes	Yes	Yes

The figure below is describing transition of Status that performed when people interact in a function. In this features, drafting process triggered on the agreement module. If service schedule already generated on the agreement module, so the status of service records will be draft too, and vice versa.
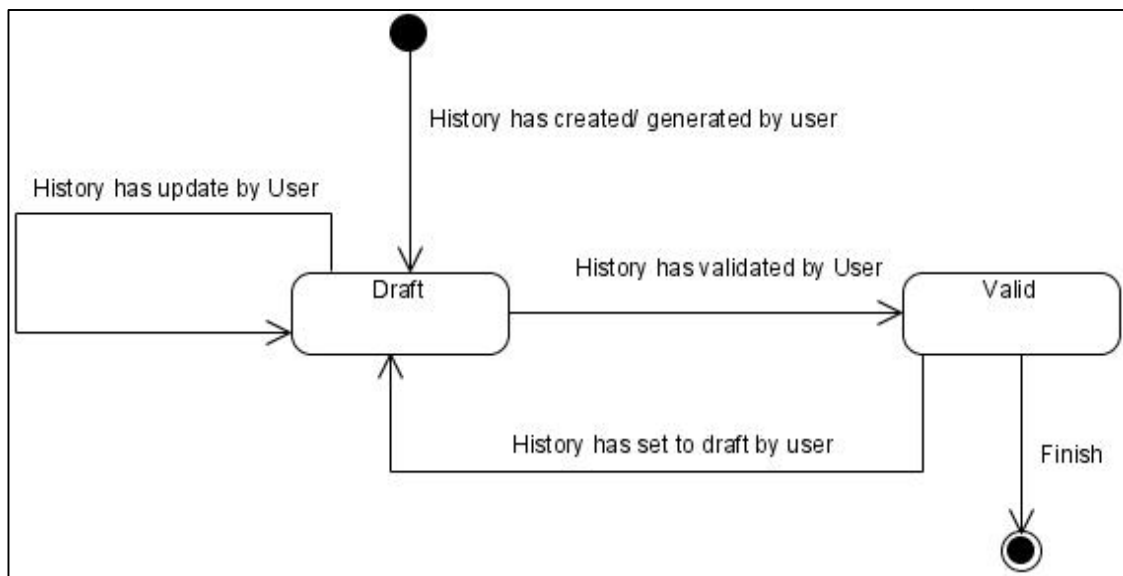
Figure 3 – Status diagram of Service History Inquiry

2.1.4   Sitemap design

Describe a web page that lists the pages on a web site to users. Usually sitemap organized in hierarchical style.

Figure 4 – Sitemap design of Service History Inquiry

2.1.5   Screen design

2.1.5.1   Service history inquiry

This screen is designed to service history inquiry. On this screen actor can open service records. And also, actor can open another screen to add and/or update service history record.

Figure 5 – Service History Inquiry Screen

2.1.5.2 Add new service history records

This screen is designed to add new service history record. After filling out necessary data on the screen, actor can store a data into the system by clicking the action button.

Figure 6 – Screen of Add New Service History Record

Figure 7 – Screen of Add New Implementation item

Figure 8 – Screen of Add New Part item

2.1.5.3 Update service history records

This screen is designed to update the service history records. After changing some data on the screen, actor can store a data into the system by clicking the action button.

Figure 9 – Screen of Update Details Service History

Figure 10 – Screen of Add New Implementation item

Figure 11 – Screen of Add New Part item

Functional Specification: A.2 Maintenance Module			
Project	Operating Lease Support System Development		
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2.1.6   Screen features

Features	Description
[Filter and sort]	To perform data filtering and data sorting of records.
[Add new]	To add new record by entering data on the 'create' form.
[Save as draft] or [Set to draft]	To save a record as a draft.
[Validate]	To validate a record as a final.
[Save changes]	To update changes when editing sorting record.
[Delete]	To delete the service history records.

2.1.7   Data structure

Field	Data Type	Data Length	Format	Mandatory	DB Mapping
Agreement Information					
Agreement Number	Varchar	50	N/A	*Yes*	OPLAgreement.AgreementNumber
Previous Agreement Number	Varchar	100	N/A	*No*	OPLAgreement.AgreementNumberReff
Agreement Date	Date	N/A	mm/dd/yyyy	*Yes*	OPLAgreement.AgreementDate
Service Record History					
Police Number / Invoice Number	Varchar	20	N/A	*Yes*	OPLUObjectLease.IdentityPoliceNumber
Engine Number	Varchar	100	N/A	*Yes*	OPLUObjectLease.EngineNumber
Marketing Officer PIC Name	Varchar	200	N/A	*Yes*	OPLAgreement.PICFullName
Marketing Officer PIC Position	Varchar	50	N/A	*Yes*	OPLAgreement.PICPositionName
Marketing Officer PIC Phone	Varchar	50	N/A	*Yes*	OPLAgreement.PICTelephone
Marketing Officer PIC Email	Varchar	50	N/A	*Yes*	OPLAgreement.PICEmailAddress
Customer Name	Varchar	200	N/A	*Yes*	Customer.CustomerName
Product Brand Name	Varchar	100	N/A	*Yes*	Product.BrandName
Product Model Name	Varchar	100	N/A	*Yes*	Product.ModelName

Functional Specification: A.2 Maintenance Module

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Model Year	Date	N/A	Yyyy	Yes	Product.Model Year
Lease Category	Varchar	100	N/A	Yes	OPLAgreement. LeaseCategory
Maintenance Type	Varchar	100	N/A	Yes	OPLAgreement Details.Maintenance Type
Insurance	Bit	N/A	N/A	Yes	OPLAgreement. IsInsurance
Purchase Required	Bit	N/A	N/A	Yes	OPLAgreement. PurchaseAfterLease
Start Date Usage Unit	Date	N/A	mm/dd/yyyy	Yes	OPLAgreement. StartPeriodDate
End Date Usage Unit	Date	N/A	mm/dd/yyyy	Yes	OPLAgreement. EndPeriodDate
Lease Period	Int	N/A	N/A	Yes	OPLCalculation. LeasePeriodPlan
Usage	Varchar	100	N/A	Yes	OPLAgreement Details.Usage
Service History Summary					
Maintenance Budget	Decimal	18,0	###,###,###.##	Yes	OPLServiceHistorySum.Maintenance Budget
Maintenance Disbursement	Decimal	18,0	###,###,###.##	Yes	OPLServiceHistorySum.Maintenance Disbursement
Digestibility	Decimal	18,6	###,###,###.##	Yes	OPLServiceHistorySUm.Digestibility
General Information of Service					
Agreement Number	Varchar	50	N/A	Yes	OPLAgreement. AgreementNumber
Previous Agreement Number	Varchar	100	N/A	No	OPLAgreement. AgreementNumberReff
Agreement Date	Date	N/A	mm/dd/yyyy	Yes	OPLAgreement. AgreementDate
Police Number/Invoice Number	Varchar	20	N/A	Yes	OPLUObjectLease.IdentityPoliceNumber
Engine Number	Varchar	100	N/A	No	OPLUObjectLease.EngineNumber
Maintenance Type	Varchar	100	N/A	Yes	OPLServiceHistory.MaintenanceType
Service History Details					

Functional Specification: A.2 Maintenance Module

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Service Date	Date	N/A	mm/dd/yyyy	Yes	OPServiceHistory.ServiceDate
Actual Mileage	Int	N/A	N/A	Yes	OPLServiceHistory.MonthlyMileage
Workshop	Varchar	100	N/A	Yes	Supplier.SupplierName
Perodic Maintenance	Bit	N/A	N/A	Yes	OPLServiceHistory.IsPerodicMaintenance
Customer Service Desk	Bit	N/A	N/A	Yes	OPLServiceHistory.IsCServiceDesk
Iregular Maintenance	Bit	N/A	N/A	No	OPLServiceHistory.IsIregularMaintenance
Sub Total	Decimal	18,0	###,###,###.##	No	OPLServiceHistory.SubTotal
PPN Tax	Decimal	18,0	###,###,###.##	No	OPLServiceHistory.PPNTax
PPH Tax	Decimal	18,0	###,###,###.##	No	OPLServiceHistory.PPHTax
Total	Decimal	18,0	###,###,###.##	No	OPLServiceHistory.TotalIncludeTax
Implementation Item					
Implementation Item	Varchar	100	N/A	Yes	OPLSHistoryItems.ImplementationItems
Labor Cost Amount	Decimal	18,0	###,###,###.##	Yes	OPLSHistoryItems.LaborCostAmount
PPN Tax	Decimal	18,0	###,###,###.##	No	OPLSHistoryItems.PPNTax
PPH Tax	Decimal	18,0	###,###,###.##	No	OPLSHistoryItems.PPHTax
Remarks	Varchar	200	N/A	No	OPLSHistoryItems.Remarks
Parts Item					
Part Code	Varchar	50	N/A	Yes	OPLSHistoryParts.PartCode
Part Name	Varchar	100	N/A	Yes	OPLSHistoryParts.PartName
Type Of Action	Varchar	100	N/A	Yes	OPLSHistoryParts.TypeOfAction
Quantity	Int	N/A	N/A	Yes	OPLSHistoryParts.Quantity
Amount	Decimal	18,0	###,###,###.##	Yes	OPLSHistoryParts.Amount
PPN Tax	Decimal	18,0	###,###,###.##	No	OPLSHistoryParts.PPNTax
PPH Tax	Decimal	18,0	###,###,###.##	No	OPLSHistoryPar

					ts.PPHTax
Remarks	Varchar	200	N/A	No	OPLSHistoryParts.Remarks
Audit Rail					
Create By	Varchar	25	N/A	*Yes*	CreateBy
Create Date	Date	N/A	mm-dd-yyyy:hh-mm-ss	*Yes*	CreateDate
Last Modified By	Varchar	25	N/A	*Yes*	LastModifiedBy
Last Modified	Date	N/A	mm-dd-yyyy:hh-mm-ss	*Yes*	LastModified
Status Management					
Is Deleted	Bit	N/A	N/A	*Yes*	IsDeleted
Is Draft	Bit	N/A	N/A	*Yes*	IsDraft
Is Submitted	Bit	N/A	N/A	*Yes*	IsSubmitted
Is Valid	Bit	N/A	N/A	*Yes*	IsValid

3   Appendix

3.1   Use Case Terminology

What is the use case?

(i)   **_A use case is_** _a written description of how users will perform tasks on your website. It outlines, from a user's point of view, a system's behavior as it responds to a request. Each use case is represented as a sequence of simple steps, beginning with a user's goal and ending when that goal is fulfilled. (http://www.usability.gov/how-to-and-tools/methods/use-cases.html)_

(ii)   **_A use case is_** _a list of steps, typically defining interactions between a role and a system. (http://en.wikipedia.org/wiki/Use_case)_

(i)   **_A use case is_** _a formal way of representing how a business interacts with its environment. it summarized into a single picture. (http://romisatriawahono.net/lecture/sad/romi-sad-05-implementation-march2014.pptx)_

What are Benefits of use cases?

(i)   **_Use cases_** _add value because they help explain how the system should behave and in the process, they also help brainstorm what could go wrong. They provide a list of goals and this list can be used to establish the cost and complexity of the system. Project teams can then negotiate which functions become requirements and are built._

What Use Cases Include	What Use Cases Do NOT Include
• Who is using the website • What the user want to do • The user's goal • The steps the user takes to accomplish a particular task • How the website should respond to an action	• Implementation-specific language • Details about the user interfaces or screens.

(http://www.usability.gov/how-to-and-tools/methods/use-cases.html)

(ii)   _With the help of use case diagram, you can discuss and communicate:_

- _The scenarios in which your system or application interacts with people, organizations, or external systems._

- _The goals that it helps those actors achieve._

- _The scope of your system._

(http://msdn.microsoft.com/en-us/library/dd409432.aspx)