ASSET MANAGEMENT INFORMATION SYSTEM IN PT RADIO MORA PARNA KARSA

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ABSTRACT

Asset Management Information System is a way of controlling assets owned by the company by using information technology. The development of this asset management information system uses the POAC model as the management cycle. The cycle on this POAC model will result in a good management stage in the management of this asset.

This information system also uses SAW (Straigth Additive Weigth) method in asset procurement analysis. This method uses the criteria of price, specification and quality in determining the assets that must be held at the company. Each tangible asset has a useful life. So in this case, asset depreciation must be known to be well managed. Straight Line method is used for asset depreciation analysis. By knowing the depreciation of the asset, it will be possible to abolish or replace the new (tangible assets) asset.

Based on the results of this asset management information system development, will be known what assets will be used in the company and the selection of assets in accordance with the needs of the company. This management information system will also generate asset recommendations that should be written off so that assets can be updated.

***Keywords**: Asset, SAW Method, Straigth Line Method, POAC*

1. INTRODUCTION

1.1 Background

The existence of problems in the procurement of assets in the company by not doing good planning will lead to errors in the procurement. According to the results of research conducted asset procurement at the company is done based on the estimated number and usefulness of the asset without having to consider the quality, specification or price it will cause the problem of non-conformity of procurement of assets required by the company, so that will affect the work process of employees who are not in accordance with the purpose.

Another problem is the removal of an asset if an asset is irreversible. The absence of the asset depreciation calculation underlying the asset removal decision causes the write-off of assets not being carried out in accordance with the asset's useful life. An asset should be calculated for depreciation (other than land) and removal to allow existing goods or assets to be updated. If the deletion is not done, it will result in continuous improvement and the accumulation of assets or goods in the warehouse. This causes the use of the room to be a lot just to store goods or assets that can not be used. With the system, it will be able to know the appropriate asset procurement and asset calculation provide information or recommendations on decisions in asset management. Knowing the right asset and asset depreciation will help asset management.

Based on the background of the problems that have been described, it will be built "Asset Management Information System At PT. Radio Mora Parna Karsa "

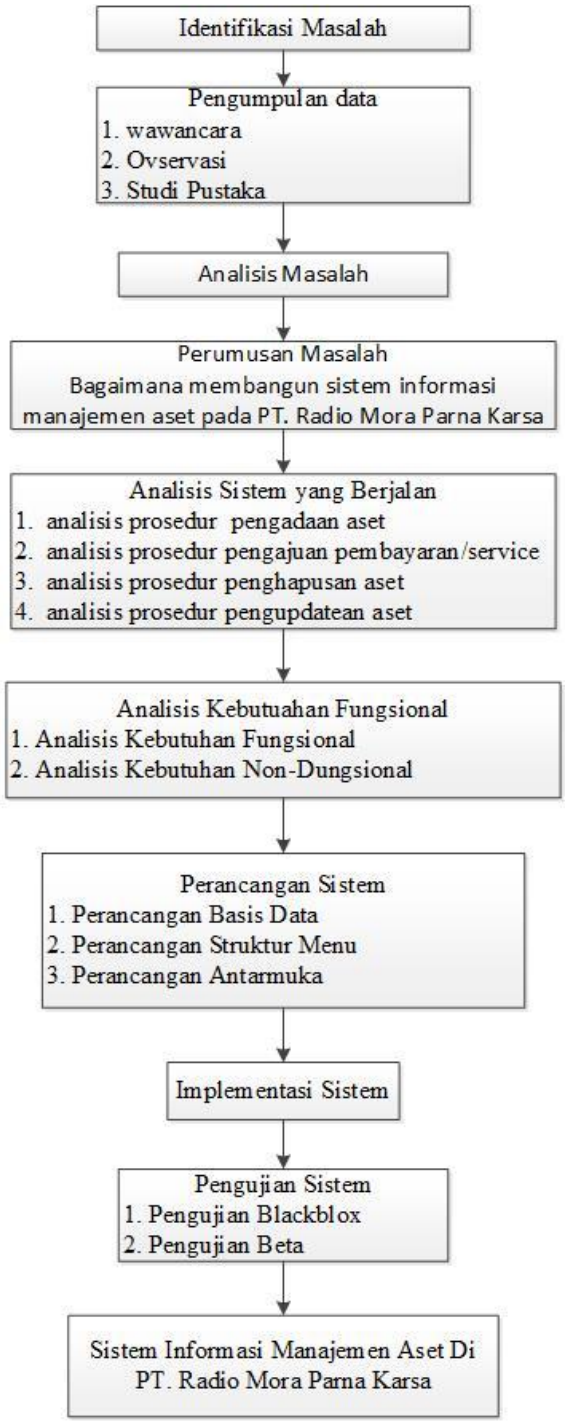
1.2 Research Purpose

The purpose of this research is as follows:

1. *Assist in making asset procurement decisions based on the specification and price specifications that meet the company's needs.*
2. *Assist the calculation of depreciation of assets in the decision takedown asset*

1.3 Reasearch Methodology

In conducting this research, the authors use descriptive analysis method, which is collecting data and then analyzing it and explaining the results of the observations.



Gambar 1 Metodologi Penelitian

2. CONTENT OF RESEARCH

2.1 Management of tangible asset

a. *Introduction of Tangible Assets Based on the results of the planning of the procurement, it will be in the know needs of assets needed by the company. Either based on the needs of any asset, the amount along with the price requirement.*

b. *Improvement of Tangible Assets Asset improvements are made based on the asset condition seen from the stock of asset usage. Asset improvements need good management to keep existing assets well maintained*

c. *Removal of tangible assets Any assets other than land must have depreciation or residue. From each depreciation of these results it will be used as a reference as a benchmark of removal. But if the condition of the asset is still good, the elimination does not need dilakuka. The calculation of asset depreciation is only to assist the calculation of asset depreciation only.*

2.2 Management of Intangible Assets

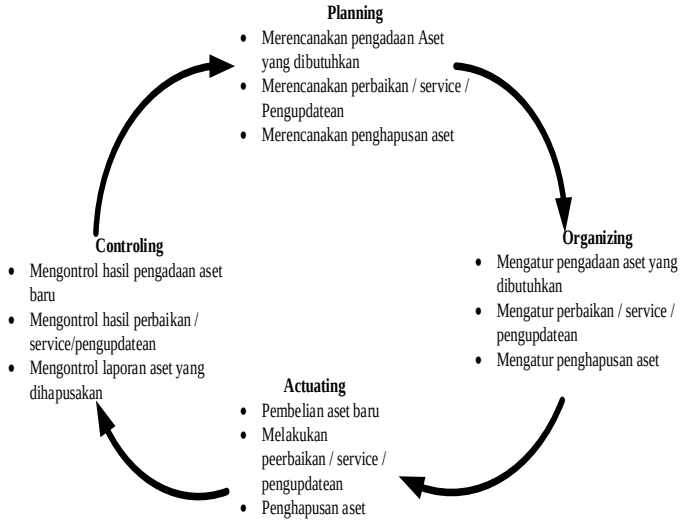
a. *Procurement of Intangible Assets The procurement of intangible assets is done based on the results of planning on intangible assets.*

b. *Intangible Asset Update Intangible asset renewal is done barkala. Updates can either renew or replenish. For example, a business license must be renewed. Suppose that every 5 years, it must be updated every 5 years. Similarly to all intangible assets carried out the same thing in accordance with the planning that has been made*

.

2.3 POAC Model For Asset SIM

The POAC (Planning Organizing Actuacting Controlling) model is used to provide an overview of management processes that exist within the asset management information system.



Gambar 2 Model POAC pada SIM Aset

2.4 Analysis of asset procurement using SAW method

a. *criteria and weights*
In the process of calculation of SAW requires criteria that will be taken into consideration in the process of ranking criteria which become

the material considerations as in the following table:

Tabel 1 Kriteria dan Bobot

Kriteria	*Keterangan*	*Status*	*Bobot (%)*
C_1	*Spesifikasi*	*Benefit*	*0.3*
C_2	*Kualitas*	*Benefit*	*0.3*
C_3	*Harga*	*Cost*	*0.4*

b. *Parameters user in the calculation*

1. *Specification value*
   The specification criteria is a requirement required for decision making, based on the specifications of the supplier data.

Tabel 2 Kriteria nilai spesifikasi

Keterangan	*Nilai*
Sangat jelek	*0.1*
Jelek	*0.2*
Cukup	*0.3*
Baik	*0.4*
Sangat baik	*0.5*

2. *Kriteria nilai kualitas*

The specification criteria are the requirements required for decision-making, based on known quality by name and asset type.

Tabel 3 Kriteria nilai kualitas

Keterangan	*Nilai*
Sangat jelek	*0.1*
Jelek	*0.2*
Cukup	*0.3*
Baik	*0.4*
Sangat baik	*0.5*

3. *Price Value*
   Price criteria are required requirements for decision making, based on asset price adjustment based on price data on supplier data.
   .
4. *Alternative assets are marked with A1 to An with the following description:*
   A_1 = *aset 1*
   A_2 = *aset 2*
   A_3 = *aset 3*
   A_n = *aset n*
5. *Criteria marked with C1 to C3 are used as reference in decision making as seen in the description below:*
   C_1 = *evaluasi spesfikasi*
   C_2 = *evaluasi kualitas*
   C_3 = *evaluasi harga*
6. *Determine the weight of preference or importance of each criterion. For example in an electronic procurement plan shown in table 2.4 below:*

Tabel 4 Bobot Preferensi Setiap Kriteria

Alternatif	*Kriteria*		
	Spesifikasi	*Kualitas*	*Harga (Rp)*
CPU A	*Baik*	*Baik*	*3.000.000*
CPU B	*Sangat Baik*	*Baik*	*3.900.000*
CPU C	*Cukup*	*Baik*	*2.800.000*
CPU D	*Baik*	*Sangat baik*	*4.000.000*

7. *Match rating of each alternative on each criterion*

Tabel 5 Rating Kecocokan Setiap Kriteria

Alternatif	*Kriteria*		
	C_1	C_2	C_3
A_1	*0.4*	*0.4*	*3.000.000*
A_2	*0.5*	*0.4*	*3.900.000*
A_3	*0.3*	*0.4*	*2.800.000*
A_4	*0.4*	*0.5*	*4.000.000*

8. *Perform normalization process by calculating the normalized performance rating (rij) based on the equation below which is adjusted to the type of criteria*

For $r_{ij} = \begin{cases} \dfrac{x_{ij}}{Max_i(x_{ij})} \\ \dfrac{Min_i(x_{ij})}{x_{ij}} \end{cases}$ *evaluation criteria specification and quality evaluation use benefit criterion while for price criterion use cost criterion.*

Normalisasi spesifikasi

$$R_{11} = \frac{x11}{maxi(x11;x21;x31;x41)} = \frac{0.4}{0.5} = 0.8$$
$$R_{21} = \frac{x21}{maxi(x11;x21;x31;x41)} = \frac{0.5}{0.5} = 1$$
$$R_{31} = \frac{x31}{maxi(x11;x21;x31;x41)} = \frac{0.3}{0.5} = 0.6$$
$$R_{41} = \frac{x41}{maxi(x11;x21;x31;x41)} = \frac{0.4}{0.5} = 0.8$$

Normalisasi kualitas

$$R_{12} = \frac{x12}{maxi(x12;x22;x32;x42)} = \frac{0.4}{0.5} = 0.8$$

$$R_{22} = \frac{x22}{maxi(x12;x22;x32;x42)} = \frac{0.4}{0.5} = 0.8$$
$$R_{32} = \frac{x32}{maxi(x12;x22;x32;x42)} = \frac{0.4}{0.5} = 0.8$$
$$R_{42} = \frac{x42}{maxi(x12;x22;x32;x42)} = \frac{0.5}{0.5} = 1$$

Normalisasi harga

$$R_{13} = \frac{mini(x13;x23;x33;x43)}{x13} = \frac{2800000}{3000000} = 0.93333$$
$$R_{23} = \frac{mini(x13;x23;x33;x43)}{x23} = \frac{2800000}{3900000} = 0.71795$$
$$R_{33} = \frac{mini(x13;x23;x33;x43)}{x33} = \frac{2800000}{2800000} = 1$$
$$R_{43} = \frac{mini(x13;x23;x33;x43)}{x43} = \frac{2800000}{4000000} = 0.7$$

9. *The result of a normalized performance rating will form a normalized matrix based on the following equation:*

$$R = \begin{bmatrix} r11 & r12 & \dots rij \\ \dots & \dots & \\ ri1 & ri2 & \dots rij \end{bmatrix}$$

$$R = \begin{bmatrix} 0.80000 & 0.80000 & 0.93333 \\ 1.00000 & 0.80000 & 0.71795 \\ 0.60000 & 0.80000 & 1.00000 \\ 0.80000 & 1.00000 & 0.70000 \end{bmatrix}$$

10. *The preferred value of each alternative. After the normalization process, then continue the process of sequencing by multiplying the weight that has been determined by decision making. Weight preference will be formed based on the following equation*

:

$W = [W_1 \quad W_2 \quad W_3 \quad \dots \quad W_j]$

$W = [0.3;0.3;0.4]$

Next look for the final value of the sum of the multiplication of matrix line elements based on the following equation:

$$V_i = \sum_{j=1}^{n} w_j r_{ij}$$

V_1= (0.80000).(0.3) + (0.80000).(0.3) + (0.93333).(0.4) = 0.53332
V_2= (1.00000).(0.3) + (0.80000).(0.3)+ (0.71795).(0.4) = 0.82718
V_3= (0.60000).(0.3) + (0.80000).(0.3) + (1.00000).(0.4) = 0.82000
V_4= (0.80000).(0.3) + (1.00000).(0.3) + (0.70000).(0.4) = 0.82000

The greatest value is on V2 so alternative A2 is the selected alternative recommendation as the best alternative.

The conclusion is that CPU 2 has the greatest value and can be selected as goods or assets to be procured at the company.

2.5 Analisis perbaikan / service / update

Stages of repair / service assets done by looking at conditions of damage to assets or with the condition of assets that require regular service. If in the repair / service there is a replaced spare parts, then this stage has also been updating

Tabel 6 Kondisi Aset

No	No Lokasi	Jenis Aset	Nama	Tahun keluaran	Tahun pengadaan	*Services* Terakhir	Kondisi Fisik	Keterangan
1	02	Kendaraan	Honda Revo 110	2011	2011	17 April 2017	Rusak Ringan	Bodi sisi kanan pecah, Lampu sein mati sebelah kanan.
2	02	Elektronik	CPU Acer Core i5	2013	2014	-	Rusak	Power suplay terbakar

From the example cases in table 2.6 above, Honda Revo 110 vehicles were slightly damaged with a description of the body broke and the lights off. So the decision to be taken is to make improvements to the body and lights sign the vehicle. Unlike the case with the electronic assets of the Acer Core i5 CPU. Experiencing power supply failures not powered. In this asset may be repair or service ordinary, because the damage is not known clearly.

***2.5** Asset Abolition Analysis with Straight Line method*

Elimination / annihilation is done when an asset is no longer used by the company or the function of the asset is no longer appropriate to the needs of the company. Removal by temporary storage in a warehouse, selling, granting to another company / person and disposing of or annihilating. By calculating the depreciation of goods or assets, it will be known whether the goods or assets are still being used, removed by storing the storehouse, sold or disposed of.

Tabel 7 Data aset yang akan dicari penyusutannya

No	Jenis Barang	Nama	Tahun pengadaan	Umur ekonomis	Harga perolehan

1	Kendaraan	Honda Revo CW ABS 110	2011	10 Tahun	12.000.000
2	Furniture	Meja Siaran	2014	12 Tahun	2.000.000
3	Elektronik	Radio Tape	2012	10 Tahun	1.750.000
4	Elektronik	Mixer	2014	20 Tahun	2.600.000
5	Elektronik	Headphone	2013	5 Tahun	500.000
6	Elektronik	Microphone	2013	10 Tahun	1.100.000
7	Elektronik	CPU	2012	10 Tahun	5.000.000
8	Elektronik	Mesin pemancar	2015	20 Tahun	10.000.000
9	Elektronik	Telepon	2016	8 Tahun	300.000
10	Elektonik	Audio Processor	2014	15 Tahun	15.000.000

Based on table 2.7 above it will look for residual value of each goods based on the following equation:

*Nilai sisa = P% * harga perolehan*

Table 2.8 shows the results of calculations looking for residual values.
Tabel 8 Data aset yang telah diketahui nilai sisa

No	Jenis Barang	Nama	Tanggal pengadaan	Umur ekonomis	Harga perolehan	Nilai Sisa
1	Kendaraan	Honda Revo CW ABS 110	2011	10 Tahun	12.000.000	1.200.000
2	Furniture	Meja Siaran	2014	12 Tahun	2.000.000	166.667
3	Elektronik	Radio Tape	2012	10 Tahun	1.750.000	175.000
4	Elektronik	Mixer	2014	20 Tahun	2.600.000	130.000
5	Elektronik	Headphone	2013	5 Tahun	500.000	100.000
6	Elektronik	Microphone	2013	10 Tahun	1.100.000	110.000
7	Elektronik	CPU	2012	10 Tahun	5.000.000	500.000
8	Elektronik	Mesin pemancar	2015	20 Tahun	10.000.000	500.000
9	Elektronik	Telepon	2016	8 Tahun	300.000	37.500
10	Elektonik	Audio Processor	2014	15 Tahun	15.000.000	1.000.000

After the known residual value, then the next is directly calculated depreciation rates and depreciation costs based on the equation:

Tarif Penyusutan (P%) = 100% / Masa Manfaat
*Biaya penyusutan = P% * (harga perolehan – nilai sisa)*

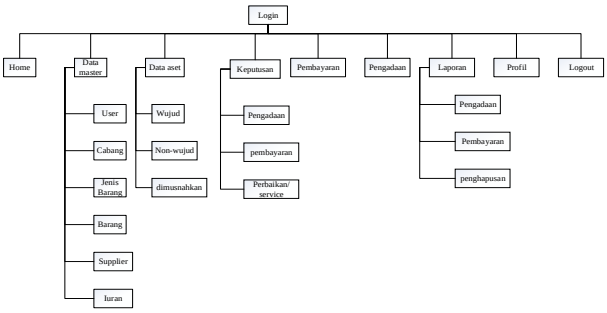
Tabel 9 Data Aset yang telah diketahui tarif penyusutan dan biaya penyusutan

no	Nilai buku awal tahun (Rp)	Tarif penyusutan	Biaya penyusutan	Nilai buku tahun terakhir
1	12.000.000	10%	1.080.000	10.800.000
2	2.000.000	8.3%	152.167	1.826.000
3	1.750.000	10%	157.500	1.575.000
4	2.600.000	5%	123.500	2.470.000
5	500.000	20%	20.000	400.000
6	1.100.000	10%	99.000	990.000
7	5.000.000	10%	450.000	4.500.000
8	10.000.000	5%	475.000	9.500.000
9	300.000	12.5%	21.000	262.500
10	15.000.000	6.67%	210.000	14.000.000

For example, taken an asset from the calculation of the table above, the Honda Revo CW ABS 110 with a lifetime of 10 years. This asset is held in 2011. If the economic life is 10 years, then the economic life is 2011 to 2021. Year procurement until the year now has reached 6 years.
The following Table 2.10 shows the depreciation value in accordance with the procurement year of the asset being sampled
Tabel 10 Hasil Perhitungan Penyusutan Tahun ke-6

After getting the depreciation value, it will be organized any assets that will be eliminated in accordance with the value of the rest that has been set.

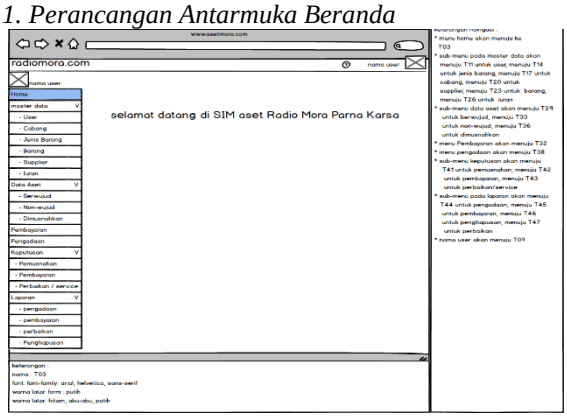
2.6 Peracangan Struktur Menu



Gambar 3 Stuktur Menu

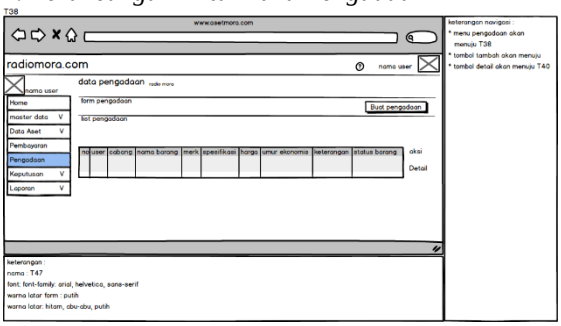
2.7 Perancangan Antarmuka

1. Perancangan Antarmuka Beranda



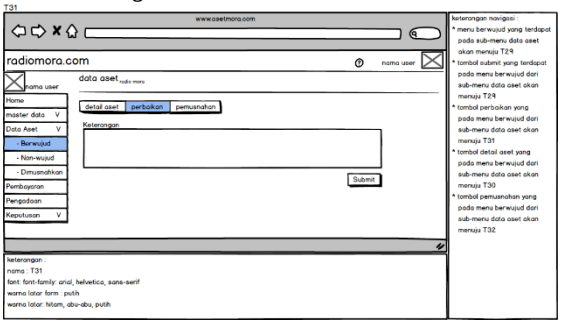
Gambar 4 Perancangan Antarmuka Beranda

2. Perancangan Antarmuka Pengadaan



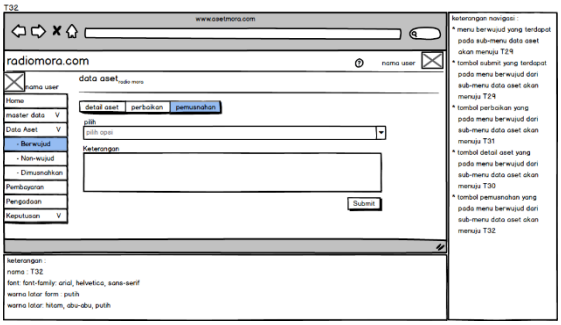
Gambar 5 Perancangan Antarmuka Pengadaan

3. Perancangan Antarmuka Perbaikan



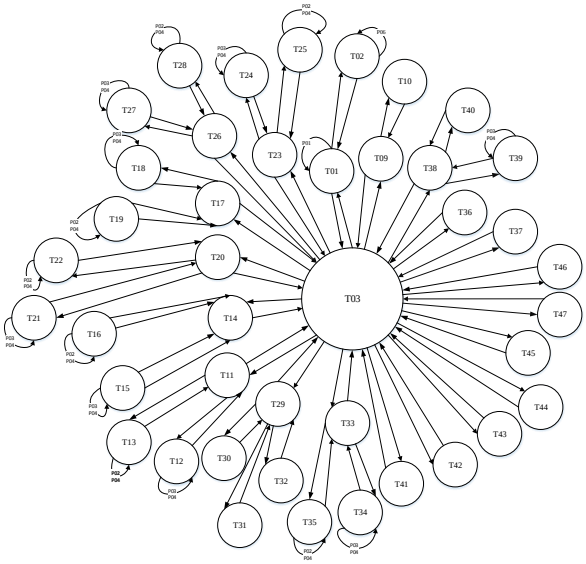
Gambar 6 Perancangan Antarmuka Perbaikan

4. Perancangan Antarmuka Penghapusan



Gambar 7 Perancangan Antarmuka Penghapusan

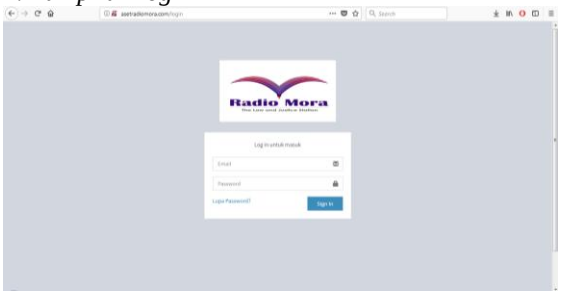
2.8 Perancangan Jaringan Semantik



Gambar 8 Perancangan Jaringan Semantik

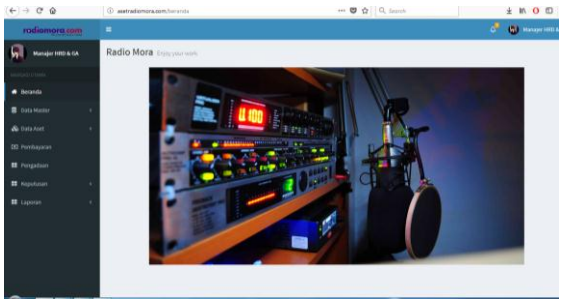
2.9 Implementasi Program

1. Tampilan login



Gambar 9 Tampilan Login

2. Tampilan Beranda



Gambar 10 Tampilan Beranda

2.10 Conclusion black box testing

Tabel 11 Conclusion backbox testing

Item Uji	*Detail Pengujian*	*Jenis Pengujian*	*Hasil Uji*
Login	*Verifikasi login*	*Black Box*	*Ok*
Lupa Kata Sandi	*Memasukkan email dan password*	*Black Box*	*Ok*
Pengolahan data user	*Tambah data*	*Black Box*	*Ok*
Pengolahan data cabang	*Tambah data*	*Black Box*	*Ok*
Pengolahan data jenis barang	*Tambah data*	*Black Box*	*Ok*
Pengolahan data barang	*Tambah data*	*Black Box*	*Ok*
Pengolahan data supplier	*Tambah data*	*Black Box*	*Ok*
Pengolahan data iuran	*Tambah data*	*Black Box*	*Ok*
Pengolahan data aset berwujud	*Mengolah kondisi dan mengajukan perbaikan atau penghapusan*	*Black Box*	*Ok*
Pengolahan data aset tidak berwujud	*Tambah data*	*Black Box*	*Ok*
Pengolahan data pengadaan	*Memilih data barang pengadaan*	*Black Box*	*Ok*

Based on the results of tests that have been done, it can be concluded that every process in the system built still possible syntax error occurs, but functionally sostem can release the expected results

3. Close

3.1Conclusion

Based on the description of the discussion and testing that has been done, it can be concluded towards Asset Management Information System as follows:

1. *Management Information System This asset is enough help to determine which assets are suitable held in the company in accordance with the needs*
2. *Asset Management Information System is quite helpful in performing asset renewal based on asset usefulness calculation*
3. *This asset management information system can help to reduce the buildup of archiving documents that are vulnerable to loss.*

1.2 Suggestion

Based on the conclusions described, the expected future is for Asset Management Information System at PT. Radio Mora Parna Karsa can be developed more widely by going to ketahap then that is integrated with cash (finance) owned by the company. With the integration of financial data, it can be calculated all assets or assets owned by the company. It can also measure the increase in income or wealth in a given time scale

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