# THE APPOINTMENT OF CONTRACT EMPLOYEES USING *SIMPLE ADDITIVE WEIGHT* METHOD IN PT SURYA ENERGI INDOTAMA RECRUITMENT MANAGEMENT INFORMATION SYSTEM

Irpan Permana[1], Riani Lubis[2]

[1,2] Informatics Engineering - Universitas Komputer Indonesia
Jl. Dipatiukur 112-114 Bandung
E-mail : irvanper2701@yahoo.com[1], riani.lubis@email.unikom.ac.id[2]

## ABSTRACT

This research was conducted at PT Surya Energi Indotama, based on the results of interviews with the HR & General Manager and HR & General Development Staff, for now the appointment of permanent contract employees to PT Surya Energi Indotama is based on the evaluation of contract employee performance evaluations that are routinely carried out every year. in December. Permanent appointment of contract employees is based on submissions from the Department or Section, so that employee performance appraisals will be processed to select contract employees who will be appointed as permanent employees. The ongoing performance appraisal of contract employees is still done by assessing 2 categories of assessment, namely work results and work processes so that in the selection process the contract employee appointment is carried out without considering the competency requirements in accordance with the positions required by the Department or Section submitting. Based on interviews with the HR & General Manager and HR & General Development Staff, the recruitment process has caused the President Director to have difficulty in determining the decision to appoint contract employees to permanent ones that are in accordance with the position of competency requirements required by the Department or Section submitting. So with this we need a system that can help the recruitment management process in determining the decisions of contract employees who will be appointed as permanent employees in accordance with the position of competency requirements of the Department or Section that submits. Based on the results of blackbox testing, the user accepted test (UAT) and interviews can be concluded that this system has assisted the HR & General and Managing Director in deciding the decision to appoint contract employees to keep in accordance with the position competency requirements of the Department or Section submitting.

**Keywords:** Performance Assessment, Position Competency Needs, Requirement, Employee

## 1. INTRODUCTION

PT Surya Energi Indotama (SEI) is a subsidiary of PT LEN Industri which focuses on developing the latest energy sources. As an EPC (Engineering, Procurement, Construction) company, SEI provides total system solutions in the field of renewable energy such as solar power and other energy sources. SEI values the experience to provide only the best workforce and is supported by more than 50 experienced experts with a total of 55 permanent employees, 32 contract employees, 18 divisions and 69 positions as well as assistance from other experienced experts from the parent company, namely PT LEN Indistri (Persero). As an EPC Company, SEI has been proven capable and always provides quality Human Resources (HR) in accordance with the required standards. The required standards are proven by certification of expertise both national and international. PT Surya Energi Indotama continues to develop and train its Human Resources internally and externally to improve the competencies needed to provide the best results for customers.

Based on interviews with the Manager and Staff of Human Resources Development (HR) and the General, said the current conditions at SEI, that the President Director has difficulty in making decisions for the appointment of contract employees to permanent because the process of hiring contract employees to remain based on the submission from the Department/Section, but the Department/Section does not submit the competency requirements needed for the appointment of contract employees to the permanent, the period of appointment of contract employees can be done every year so that the selected contract employees may not match the Department/Section competency requirements, of 47 employees contracts that have been appointed as permanent employees are 25 employees or around 52% of employees are not in accordance with the competency when after being appointed as permanent employees. To determine the contract employees who will get the appointment of employment status will be determined based on the evaluation results of the contract employee performance appraisal with 2 assessments, namely

the work process and work results without considering the competency needs of the Department/Section so that the President Director has difficulty in making decisions about contract employees will be appointed as a permanent employee because the competency needs of employees are not in accordance with the competency requirements of the submitter. Based on the problems that arise, the proposed decision support system that is SAW (*Simple Additive Weighting*), this method is more appropriate because it is based on predetermined criteria and preference weights and can also select the best alternative from a number of alternatives that exist due to the ranking process after determining weights for each attribute.

Based on the description above, the solution offered to overcome the existing problems at PT Surya Energi Indotama is currently building a recruitment management information system that has a decision support system in the appointment of contract employees to become permanent, thus helping in the decision making process for the determination of employees who will get termination of employment status.

## 2. BASIS OF THEORY

### 2.1 Management Information System

Management information system is an integrated system that provides information to support the operational, management, and decision making functions of an organization. Management information system is an information system that gets outputs using inputs and various processes needed to meet certain objectives in management activities[1].

### 2.2 Management Information System Human Resources

HR information system is an information system to support the activities of managers in the function of human resources. Human resource information system is an information system that supports information activities, such as recruitment, selection and acceptance, determining and evaluating performance, as well as training and development. This function was originally called the function or department of personnel, now the name is changed to the function of human resources to show that people in organizations are important economic resources[1].

### 2.3 Recruitment

Recruitment or withdrawal of workers is the process of recruiting new or experienced labor candidates according to the required specifications, both from internal or external companies to fill in fields or vacant/unoccupied work positions or to equip experts in a position or part of use strengthen *team work* or expert staff in the company. Meanwhile, according to Mathis and Jakson recruitment is a process that produces a number of applicants who are qualified for employment in a company or organization.

Recruitment of employees can be done for candidates who have just graduated from an education, both universities and vocational / skilled institutions, as well as those who are senior or experienced or experts in their fields and have worked in other companies. The difference between those who have just graduated and those who have experience is of course the salary they will receive at the beginning of working according to the employment contract or the policy of the company that recruited them. Employee recruitment is generally through advertisements in newspapers, magazines, announcements or through radio or television. The aim is to obtain workers in accordance with the skills or needs of the company [2].

### 2.4 Planning Organizing Motivating Controling and Evaluation (POMCE)

Planning Organizing Motivating Controling and Evaluation abbreviated as POMCE are management functions described by POMCE are the stages that must be performed when carrying out an activity, namely as follows [3]:

a. Planning
   The first step before carrying out an activity is planning. Planning is initiated by the formation of an idea or an excuse to hold an activity. Next is to make an event concept or plan an activity plan. Good planning is done by a few people who have positions as drafter. The more heads that think, it is not necessarily a benchmark for the creation of better results. Sometimes it even prolongs the process of conceptualizing activities because more parties are involved and it is difficult to bring the viewpoints together.

b. Organizing
   If the planning step has been passed, then it will enter the organizing stage, which is to start by establishing a committee. Organizing is a step or action combining all the potential that exists from all parts of a group of organizational bodies to work together aimed at achieving common goals.

c. Motivating
   Motivating can be defined as the whole process of giving encouragement to work to subordinates in such a way that they are willing to work sincerely for the achievement of organizational goals in an efficient and economical way.

d. Controling

The main job of a leader at this stage is to control the course of activities. In this stage we need a leader who is able to make the right decisions quickly. Supervision or monitoring is a control of all series of planning, organizing, and implementing activities to see the results achieved whether they are efficient, effective, and valuable.

e. Evaluation
Evaluation is the last organic function of administration and management. The definition is the process of measuring and comparing the results of work that were actually achieved with the results that should have been achieved.

### 2.5 Decision Support System

Decision Support System is an interactive system that supports decisions in the decision making process through alternatives obtained from the results of data processing, information and model design. In the early 1970s, Scott Morton first articulated the important concepts of DSS [4].

### 2.6 Simple Additive Weight (SAW)

*Simple Additive Weighting* (SAW) according to Kusumadewi is the weighted sum method. The basic concept of the SAW method is to find a weighted sum of the performance ratings for each alternative on all criteria. The SAW method requires the decision matrix normalization process (X) to a scale that can be compared with all existing alternative ratings. The SAW method recognizes two attributes, namely the *benefit* criteria and the *cost* criteria. The fundamental difference between the two criteria is in the selection of criteria when making decisions[6].

According to Fishburn and MacCrimmon argued that the *Simple Additive Weight* (SAW) Method, often also known as the weighted sum method. The basic concept of the *Simple Additive Weight* (SAW) method is to find the weighted sum of the performance ratings for each alternative on all attributes. Meanwhile, according to Asnawati and Kanedi, for the *Simple Additive Weight* (SAW) method, the evaluation criteria can be determined according to company needs [7].

The *Simple Additive Weight* (SAW) method has the following formula :

Preference value for each alternative ($\boldsymbol{Vi}$) given as

$$\boldsymbol{V_i = \sum_{j=1}^{n} W_j r_{ij}} \quad \ldots\ldots\ldots (\mathbf{1})$$

Description :

$\boldsymbol{V_i}$ = Ranking for each alternative
$\boldsymbol{W_j}$ = The weight value of each criteria
$\boldsymbol{R_{ij}}$ = Normalized performance rating value

The *Simple Additive Weight* (SAW) method has a formula for normalizing the matrix, which is as follows :

$$\boldsymbol{R_{ij}} = \begin{cases} \dfrac{\boldsymbol{X_{ij}}}{\boldsymbol{Max\ X_{ij}}} & (Benefit) \\ \dfrac{\boldsymbol{Min\ X_{ij}}}{\boldsymbol{X_{ij}}} & (Cost) \end{cases} \quad \ldots\ldots\ldots (\mathbf{2})$$

Keterangan :

$\boldsymbol{R_{ij}}$ = Normalized performance rating
$\boldsymbol{Max\ X_{ij}}$ = The maximum value of each row and columns
$\boldsymbol{Min\ X_{ij}}$ = The minimum value of each row and columns
$\boldsymbol{X_{ij}}$ = Rows and columns of the matrix

## 3. RESULTS AND DISCUSSION

### 3.1. Problem Analysis

Analysis of the problem of the ongoing system is that the President Director has difficulty in making decisions on contract employees who will get the appointment of employment status only from the assessment of work results and work processes so that the selected employees may not be in accordance with the competency needs of the Department/Section that proposes the appointment of employment status.

### 3.2 Management Information System Analysis of Appointment of Contract Employees Using POMCE

Analysis POMCE (*Planning, Organizing, Motivating, Controlling, Evaluation*) is used to provide a description of the management process that is in the information system at PT Surya Energi Indotama. Stages of information systems using a model POMCE (*Planning, Organizing, Motivating, Controlling, Evaluation*) will be outlined in Figure 3.1


**Figure 1** Management Information System Analysis of Appointment of Contract Employees

### 3.3 Analysis Determination of Appointment Contract Employees

Analysis of the determination of employees who will get the appointment of employment status from contract employees to permanent is an assessment of contract employee performance, which is as follows:

1. Planning

*Planning* is the process of determining the number of contract employees who will get the appointment of contract employees to permanent and plan the competency requirements based on the existing position in the Department / Section that proposes the appointment of contract employees to the permanent approved by the President Director. The following assumes that the Project Management and After-Sales Department proposes the appointment of permanent contract employees with the number of contract employees to be recruited as new permanent employees is 1 employee of contract employees in the Department, and the position that becomes the need for the appointment of contract employees to still being chosen is Junior Staff Document Control.

2. Organizing

*Organizing* is the stage for submitting contract employees to permanent appointments made by the General Manager / Manager of a Department / Section in accordance with the number and position of needs that have been determined in the planning process. In this case example, the General Manager of the Project Management and After-Sales Department has submitted a contract employee appointment with 1 number of employees to be permanent employees and 1 position required by the Project Management and After-Sales Department is a Junior Staff Document Control position.

3. Motivating

*Motivating* is the stage of arranging contract employee appraisal carried out by the General Manager / Manager of a Department / Section and then the results of the assessment arrangement will be processed using the Simple Additive Weight (SAW) method as a decision support system for the appointment of contract employees to permanent. The following are contract employee data in the Project Management and After Sales Department in Table 1

**Table 1** Contract Employee Data

| No. | Contract Employee Name | Position | Departement |
|---|---|---|---|
| 1 | Apprillia Rosandi | Administrasi Proyek Jawa 1 (engineering) | Manajemen Proyek dan Purna Jual |
| 2 | Charman Syarifudin | Kominfo BTS | Manajemen Proyek dan Purna Jual |
| 3 | I Gde Nyoman | Kominfo BTS | Manajemen Proyek dan Purna Jual |
| 4 | Ikhsan Arditya Nugraha | NOC | Manajemen Proyek dan Purna Jual |
| 5 | Muhammad Firman, S.Kom | Kominfo BTS | Manajemen Proyek dan Purna Jual |
| 6 | Rachman Ginanjar | Kominfo O&M | Manajemen Proyek dan Purna Jual |
| 7 | Ricky Handjojo | Kominfo O&M | Manajemen Proyek dan Purna Jual |
| 8 | Robby Rezahana | NOC | Manajemen Proyek dan Purna Jual |
| 9 | Roffy Luthfia Fauzan | Administrasi Proyek Jawa 1 | Manajemen Proyek dan Purna Jual |
| 10 | Silvi Oktaviani | Kominfo O&M | Manajemen Proyek dan Purna Jual |

Next is the assessment criteria data for the assessment of contract employees from the Project Management and After Sales Department for the appointment of contract employees to permanent. The assessment criteria data can be seen in Table 2

**Table 2** Rating Criteria Data

| No. | Criteria | Weight in (%) | Weight in Decimal | Cost | Benefit |
|---|---|---|---|---|---|
| 1 | Hasil Kerja | 40% | 0.40 | | √ |
| 2 | Proses Kerja | 25% | 0.25 | | √ |
| 3 | Kebutuhan Jabatan | 35% | 0.35 | | √ |

Because this employee performance appraisal activity includes work performance evaluation criteria, work processes and competencies or job criteria from Junior Staff Document Control which is included in the profit attribute, it can be categorized as Benefit. And because there are no cost attributes in this valuation criteria, there are no criteria that fall into the Cost category.

Each evaluation criterion has sub-evaluation criteria as follows:

**Table 3** Work Performance Evaluation Sub Criteria

| No. | Work Performance Sub Criteria |
|---|---|
| C1 | Pengetahuan Kerja |
| C2 | Kualitas Kerja |
| C3 | Kelengkapan |
| C4 | Kecepatan |
| C5 | Ketelitian |
| C6 | Ide-ide |

**Table 4** Assessment Work Process Sub Criteria

| No. | Assessment Work Process Sub Criteria |
|---|---|
| C7 | Integritas |
| C8 | Inisiatif |
| C9 | Kerjasama |
| C10 | Penampilan Diri |
| C11 | Organisasi Kerja |
| C12 | Pemamfaatan Waktu & Biaya |

**Table 5** Sub Criteria for Position Needs Assessment

| No. | Sub Criteria for Position Need Assessment |
|---|---|
| C13 | Pendidikan Minimal SMK/SMA/Sederajat |
| C14 | Mengetahui dan memahami Document Control |
| C15 | Bertanggung jawab atas pekerjaannya |
| C16 | Berperilaku baik, komunikasi lisan dan tertulis baik |
| C17 | Bersikap jujur |

In the contract employee performance appraisal process, the results of the appraisal that have been arranged will be added up as a result for the qualification assessment that can be seen in Table 6

**Table 6** Kualifikasi Hasil Penilaian

| No. | Value/Score | Assessment Criteria |
|---|---|---|
| 1 | 500 - 567 | Istimewa |
| 2 | 450 - 499 | Sangat Baik |

| No. | Value/Score | Assessment Criteria |
|---|---|---|
| 3 | 390 - 449 | Baik |
| 4 | 0 -389 | Cukup |

To carry out the calculation process with the SAW method can be done with the following stages:

Make a decision matrix as an alternative to attribute X, where Xij is the alternative performance rating of the i to the j attribute, so that the matrix is obtained, this matrix comes from the table above, this matrix can be seen as follows:

$$X = \begin{bmatrix} 80 & 85 & 80 & 70 & 80 & 70 & 80 & 75 & 80 & 80 & 80 & 78 & 80 & 85 & 60 & 75 & 75 \\ 75 & 80 & 60 & 65 & 85 & 70 & 80 & 78 & 78 & 80 & 80 & 78 & 85 & 80 & 70 & 80 & 78 \\ 85 & 85 & 75 & 78 & 80 & 75 & 80 & 80 & 85 & 80 & 85 & 80 & 80 & 78 & 85 & 78 & 80 \\ 78 & 80 & 82 & 80 & 75 & 78 & 78 & 60 & 90 & 80 & 90 & 80 & 80 & 75 & 80 & 80 & 80 \\ 90 & 85 & 85 & 90 & 80 & 80 & 85 & 85 & 78 & 65 & 88 & 85 & 90 & 78 & 83 & 80 & 85 \\ 80 & 78 & 85 & 75 & 79 & 76 & 70 & 70 & 80 & 70 & 80 & 78 & 85 & 80 & 65 & 85 & 70 \\ 78 & 80 & 80 & 89 & 65 & 70 & 85 & 75 & 75 & 75 & 79 & 80 & 80 & 78 & 86 & 78 & 75 \\ 75 & 79 & 80 & 80 & 80 & 70 & 78 & 78 & 70 & 78 & 85 & 80 & 80 & 78 & 80 & 80 & 80 \\ 89 & 85 & 85 & 85 & 79 & 78 & 80 & 70 & 60 & 60 & 80 & 85 & 85 & 85 & 75 & 80 & 78 \\ 75 & 80 & 79 & 80 & 85 & 75 & 80 & 70 & 78 & 60 & 88 & 80 & 85 & 80 & 78 & 78 & 80 \end{bmatrix}$$

1. Conduct a decision matrix normalization process (X) to a scale that can be compared with all available alternative ratings. The normalized matrix R is obtained from the equation. To calculate this normalization uses the equation formula 2.2

   Examples for finding alternative value 1 (Apprillia Rosandi) on the value of matrix $X_{11}$for the criteria for assessing work results and sub-criteria for assessing C1 (Pengetahuan Kerja) are as follows:

$$R^{11} = \frac{80}{Max\ (80,75,85,78,90,80,78,75,89,75)} = 0.89$$

   Likewise for the calculation of the normalization decision of matrix X to run the same next, matrix R is obtained as follows.

$$R = \begin{bmatrix} 0.89 & 1 & 0.94 & 0.78 & 0.94 & 0.88 & 0.94 & 0.88 & 0.89 & 1 & 0.89 & 0.92 & 0.89 & 1 & 0.70 & 0.88 & 0.88 \\ 0.83 & 0.94 & 0.71 & 0.72 & 1 & 0.88 & 0.94 & 0.92 & 0.87 & 1 & 0.89 & 0.92 & 0.94 & 0.94 & 0.81 & 0.94 & 0.92 \\ 0.94 & 1 & 0.88 & 0.87 & 0.94 & 0.94 & 0.94 & 0.94 & 0.94 & 1 & 0.94 & 0.94 & 0.89 & 0.92 & 0.99 & 0.92 & 0.94 \\ 0.87 & 0.94 & 0.96 & 0.89 & 0.88 & 0.98 & 0.92 & 0.71 & 1 & 1 & 1 & 0.94 & 0.89 & 0.88 & 0.93 & 0.94 & 0.94 \\ 1 & 1 & 1 & 1 & 0.94 & 1 & 1 & 1 & 0.87 & 0.81 & 0.98 & 1 & 1 & 0.92 & 0.97 & 0.94 & 1 \\ 0.89 & 0.92 & 1 & 0.83 & 0.93 & 0.95 & 0.82 & 0.82 & 0.89 & 0.88 & 0.89 & 0.92 & 1 & 0.94 & 0.76 & 1 & 0.82 \\ 0.87 & 0.94 & 0.94 & 0.99 & 0.76 & 0.88 & 1 & 0.88 & 0.83 & 0.94 & 0.88 & 0.94 & 0.94 & 0.92 & 1 & 0.92 & 0.88 \\ 0.83 & 0.93 & 0.94 & 0.89 & 0.94 & 0.88 & 0.92 & 0.92 & 0.78 & 0.98 & 0.94 & 0.94 & 0.94 & 0.92 & 0.93 & 0.94 & 0.94 \\ 0.99 & 1 & 1 & 0.94 & 0.93 & 0.98 & 0.94 & 0.82 & 0.67 & 0.75 & 0.89 & 1 & 1 & 1 & 0.87 & 0.94 & 0.92 \\ 0.83 & 0.94 & 0.93 & 0.89 & 1 & 0.94 & 0.94 & 0.82 & 0.87 & 0.75 & 0.98 & 0.94 & 1 & 0.94 & 0.91 & 0.92 & 0.94 \end{bmatrix}$$

2. Looking for alternatives using the equation equation 2.1: In finding the best alternative equation alternative requires a normalized results table and a weighting criteria table. The weight of $W_j$ is obtained from the weighting of the percentage criteria being converted into decimal numbers.

   Alternative 1 (Apprillia Rosandi) :

$$v_1 = ((0,89 + 1 + 0,94+ 0,78 + 0,94 + 0,88) \times 0,40) + ((0,94 + 0,88 + 0,89 + 1 + 0,89 + 0,92) \times 0,25) + ((0,91 + 1 + 0,70 + 0,88 + 0,88) \times 0,35)$$

$$= 2,17 + 1,38 + 1,54$$

$$= 5,09$$

And to find the next alternative value and so on goes the same as the calculation above. Then the alternative value results will be obtained as follows which can be seen in Table 7

**Table 7** Alternative Value Results

| Alternative | Employee Name | Final Score |
|---|---|---|
| 1 | Apprillia Rosandi | 5,07 |
| 2 | Charman Syarifudin | 5,01 |
| 3 | I Gde Nyoman | 5,29 |
| 4 | Ikhsan Arditya Nugraha | 5,20 |
| 5 | Muhammad Firman, S.Kom | 5,48 |
| 6 | Rachman Ginanjar | 5,09 |
| 7 | Ricky Handjojo | 5,15 |
| 8 | Robby Rezahana | 5,17 |
| 9 | Roffy Luthfia Fauzan | 5,26 |
| 10 | Silvi Oktaviani | 5,18 |

The conclusion of the SPK calculation uses the *Simple Additive Weight* (SAW) method, from the calculation of finding the best alternative of 10 contract employees who will get the appointment of employment status from contract employees to permanent. Ranking of recommendations for contract employees who will get the appointment of employment status is sorted by rank can be seen in Table 8

**Table 8** Results and Recommendations for Appointment of Contract Employees

| Alternative | Employee Name | Final Score | Ranking |
|---|---|---|---|
| 1 | Muhammad Firman, S.Kom | 5,48 | I |
| 2 | I Gde Nyoman | 5,29 | II |
| 3 | Roffy Luthfia Fauzan | 5,26 | III |
| 4 | Ikhsan Arditya Nugraha | 5,20 | IV |
| 5 | Silvi Oktaviani | 5,18 | V |
| 6 | Robby Rezahana | 5,17 | VI |
| 7 | Ricky Handjojo | 5,15 | VII |
| 8 | Rachman Ginanjar | 5,09 | VIII |
| 9 | Apprillia Rosandi | 5,07 | IX |
| 10 | Charman Syarifudin | 5,01 | X |

4. Controling

*Controling* is the process of appointing contract employees to remain in accordance with decisions that have been taken from the results of employee assessments that have been made. Based on the results of the calculation of assessments that have been made, the President Director / Directors can make decisions on 1 employee who has the highest assessment results, namely Muhammad Firman, S.Kom. to be appointed as a new permanent employee in the position of Junior Staff Document Control.

5. Evaluation

*Evaluation* is evaluating the results of the appointment of contract employees to permanent which have been done as a comparison of the results of the planned appointment of contract employees. In this process the evaluation carried out was that contract employees who were appointed as new permanent employees were in accordance with the initial planning, namely to appoint 1 contract employee for the position of Junior Staff Document Control.

### 3.4 Database Analysis

Database analysis on the management information system for the appointment of contract employees using an *Entity Relationship Diagram* (ERD).

ERD only focuses on data, by showing the "data network" that exists for a given system. ERD is very useful for applications where the data and relationships that govern data are very complex. ERD was originally proposed by Peter Chen to design a relational database system and was developed by others. A series of main components are identified for ERD: data objects, attributes, relationships, and various types of indicators. The main purpose of ERD is to represent data objects and their relationships [5].

ERD designed can be seen in Figure 2

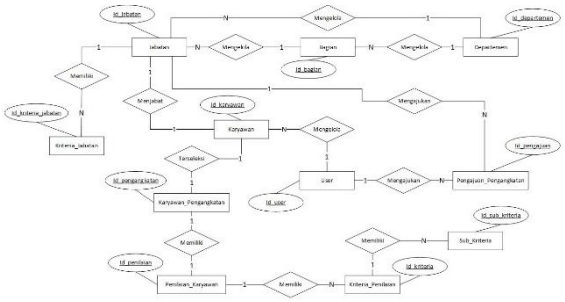


**Figure 2** ERD Recruitment Management Information System for PT Surya Energi Indotama Contract Employee Appointment

### 3.5 Context Diagram

Context diagram is the highest level diagram of DFD (Data Flow Diagrams) describing the input output of a system and relations in the system with its users. The context diagram is often referred to as DFD Level 0. The context diagram of the recruitment management information system for the appointment of contract employees at PT Surya Energi Indotama can be seen in Figure 3

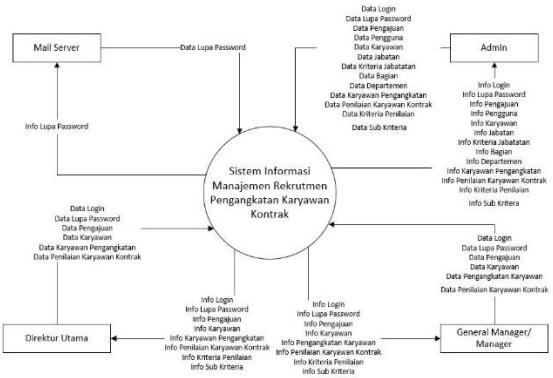


**Figure 3** Context Diagram of Recruitment Management Information System of PT Surya Energi Indotama Contract Employee Appointment

### 3.6 DFD Level 1

DFD according to Sutabri who stated *Data Flow Diagrams* (DFD) is a network that describes an automat / computerized system, manualization or a combination of the two, the description of which is arranged in the form [8].

DFD Level 1 recruitment management information system for recruitment of contract employees PT Surya Energi Indotama explained in general what processes can be carried out in the recruitment management information system for recruitment of contract employees. DFD Level 1 can be seen in Figure 4

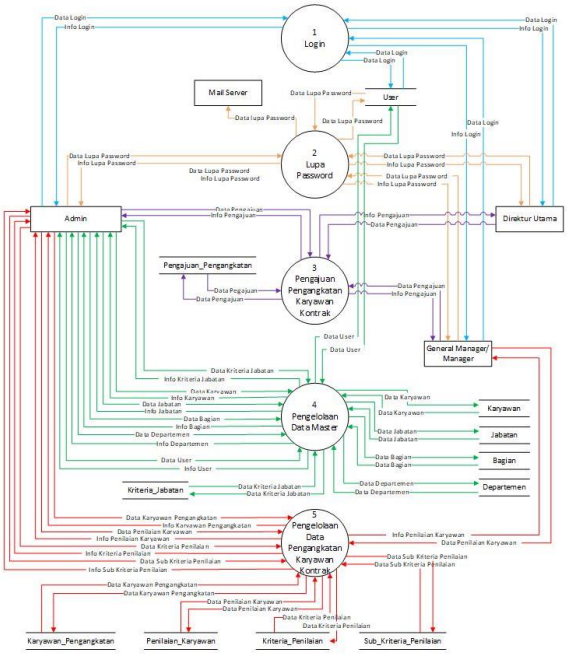


**Figure 4** DFD Level 1

### 3.7 Relationship Scheme

Relationship schemes describe interrelated data between several data and their limitations. The scheme described can be seen in Figure 5

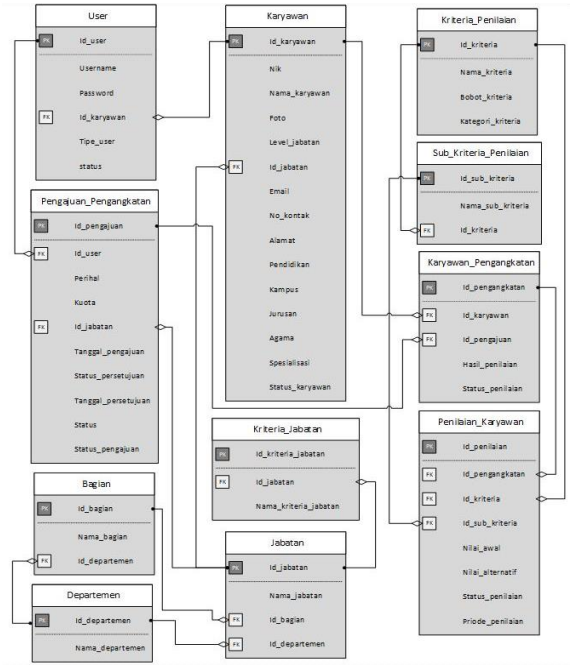


**Figure 5** Relationship Scheme

### 3.8 The Interface

The design of the login interface for the Management Information System for Recruitment for the Appointment of Contract Employees at PT Surya Energi Indotama can be seen in Figure 6

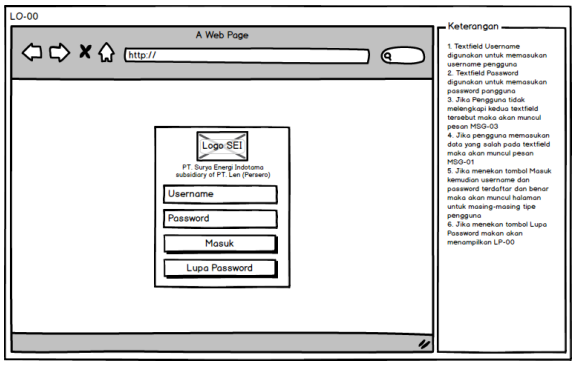


**Figure 6** The design of the login interface

The design of the system homepage interface can be seen in Figure 7

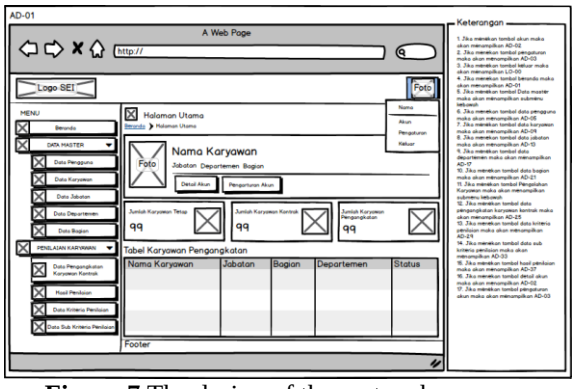


**Figure 7** The design of the system homepage interface

### 3.9 System Testing

Testing is done to assess whether the system that has been built according to needs and to evaluate the advantages of the new system with the old one. The activities in this stage are *Blackbox* testing, UAT testing.

#### 3.9.1 Blackbox Testing Conclusions

Based on the results of system testing that has been carried out as a whole, it can be concluded that the management information system for recruiting contract employees to remain at PT Surya Energi Indotama has gone through a stage of improvement in each process so as to produce the expected *output*.

#### 3.9.2 UAT Testing Conclusions

Based on the results of the *User Acceptance Test* (UAT) that has been conducted on the recruitment management information system for the appointment of permanent contract employees at PT Surya Energi Indotama, it can be concluded that the system can already be used by end users.

#### 3.9.3 Conclusion of User Acceptance Testing

Berdasarkan hasil pengujian, maka disimpulkan bahwa sistem informasi manajemen rekrutmen pengangkatan karyawan kontrak ke tetap di PT Surya Energi Indotama sangat membantu dalam proses pengambilan keputusan terhadap pengangkatan karyawan kontrak ke tetap, akan tetapi diharapkan dapat ditambahkan fungsionalitas lain dalam sistem yang dapat membantu kebutuhan perusahaan.

## 4. CLOSING

### 4.1 Conclusion

After conducting analysis, design and testing. Then the conclusion can be obtained as follows:

Management Information System for Recruitment of Contract Employee Appointment can be the President Director in determining the decision for the appointment of contract employees to remain in accordance with the submission and competency needs of the position of the Department or Section that submits.

### 4.2 Suggestions

So that the system built can work better, the following things should be added:

1. Hoping for functionality to interact between employees and the system so that employees can find out the results of decisions taken by the President Director
2. Hoping that in this recruitment management information system that is carried out not only for the management of recruitment of contract

employees to keep it but can be for the management recruitment of new employees.

## BIBLIOGRAPHY


[1] A. Rusdiana and Moch. Irfan,, Sistem Informasi Manajemen, Bandung: Pustaka Setia, 2014.

[2] E. S. Soegoto, Entrepreneurship Menjadi Pebisnis Ulung, Jakarta: KOMPAS GRAMEDIA, 2014.

[3] Syamsuddin, "Penerapan Fungsi-Fungsi Manajemen Dalam Meningkatkan Mutu Pendidikan," *JURNAL IDAARAH,* vol. 1, no. 1, pp. 60-73, 2017.

[4] A. Herdiyanti and U. D. Widianti, "Pembangunan Sistem Pendukung Keputusan Rekrutmen Pegawai Baru Di PT. ABC," *Jurnal Ilmiah Komputer dan Informatika (KOMPUTA),* vol. 2, no. 2, pp. 49-56, 2013.

[5] U. D. Widianti, "Pembangunan Sistem Informasi Aset di PT. Industri Telekomunikasi Indonesia (Persero) Berbasis Web," *Jurnal Ilmiah Komputer dan Informatika (KOMPUTA),* vol. 1, no. 2, pp. 57-62, 2012.

[6] F. S. Pratama and W. Yustanti, "Sistem Pendukung Keputusan Penerimaan Siswa Baru Menggunakan Metode SAW (Studi Kasus: SMK IPIEMS Surabaya)," *Jurnal Manajemen Informatika,* vol. 5, no. 2, pp. 143-151, 2016.

[7] Frieyadie, "Penerapan Metode Simple Additive Weight (SAW) Dalam Sistem Pendukung Keputusan Promosi Kenaikan Jabatan," *Jurnal Pilar Nusa Mandiri,* vol. XII, no. 1, pp. 37-45, 2016.

[8] M. Rahmayu, "Rancang Bangun Sistem Informasi Pada Rumah Sakit Dengan Layanan Intranet Menggunakan Metode Waterfall," *Jurnal Evolusi*, vol. 4, no. 2, pp. 33-40, 2016.

[9] N. Oktaviani, N. Merlina and Nurmalasari , "Pemilihan Jasa Pengiriman Terbaik Menggunakan Metode Simple Additive Weighting (SAW)," *JUSTIN (Jurnal Sistem dan Teknologi Informasi),* vol. 6, no. 4, pp. 219-225, 2018.

[10] S. K. Sari and Asniar, "Analisis Dan Pemodelan Proses Bisnis Prosedur Pelaksanaan Proyek Akhir Sebagai Alat Bantu Identifikasi Kebutuhan Sistem," *Jurnal Infotel,* vol. 7, no. 2, pp. 143-152, 2015.