# INTERNSHIP REPORT PT. SCHNEIDER ELECTRIC INDONESIA



Ahmad Novian Syah Putra 13 14 07544

INTERNATIONAL INDUSTRIAL ENGINEERING PROGRAM
FACULTY OF INDUSTRIAL TECHNOLOGY
UNIVERSITAS ATMA JAYA YOGYAKARTA
2017

#### APPROVAL

The internship report which is written based on the internship at PT. Schneider Electric Indonesia during the period of January 30<sup>th</sup>, 2017 to July 1<sup>st</sup>, 2017 by:

Name

: Ahmad Novian Syah Putra

Student ID

: 13 14 07544

Has been approved.

Faculty Supervisor,

The Jin Ai, ST., MT., Dr. Eng.

Cikarang, 10 July 2017 On site Supervisor,

Schneider

Adi Widiadi



## To Whom It May Concern

## Internship Acknowledgement No. 928/HRS-SITE/L/VII/2017

The undersigned herewith acknowledge that:

Name

: Ahmad Novian Syah Putra

Institution

: Universitas Atma Jaya Yogyakarta

Has successfully completed the Internship Program in PT Schneider Indonesia with the period of 30 January 2017 until 30 June 2017.

During this period of time, He worked under the supervision of Mr. Abdul Azis Budiman as Method Engineer Support.

We thank to Novian for his contribution to the company and we wish him success in his future study and career endeavor.

Cikarang, 10 June 2017

Juni Asmoro Wulandari Industrial HRBP Manager

#### PREFACE

This internship report is purposed to meet the academic requirement for doing the final internship presentation. This report is intended as the written report about the internship that is already done by Author at PT. Schneider Electric Indonesia by the period of January 30<sup>th</sup>, 2017 to July 1<sup>st</sup>, 2017.

This report is written in the following manner: introduction to the internship program, company's background, company's system, and the explanation of the assignments given during internship period as well as the result of said assignments.

Author would like to thank Mr. The Jin Ai, S.T., M.T., D. Eng. for the support and advices during author's period of internship. Special thanks to Mr. Joko Sutopo as plant director in PT. Schneider Electric Indonesia that gave Author the opportunity to do the internship.

The Author would like to address Mr. Adi Widiadi as the Author's supervisor during the internship program. Mr. Abdul Azis Budiman, Mr. Nurul, and every member of Method department as they gave Author the assignments in this internship as well as the guidance and discussion related to the projects, and thanks to every member of Method department for such a warm welcome, and Thanks to Mr. Adi Widiadi and Mrs. Santi as they accepted Author's request for the internship, and for the helps they provide to Author while doing the internship.

Last but not least, Author would like to thank the author's family for the endless support, friends, whose names cannot be mentioned one by one, who never fail to crack a smile on author's face, you are the reason the Author absolutely enjoy to stay in Bekasi.

Cikarang, 10 July 2017

Author

#### **TABLE OF CONTENTS**

APPROVAL	i
PREFACE	ii
TABLE OF CONTENTS	ii
LIST OF TABLES	V
LIST OF FIGURES	vi
APPENDIX	vii
CHAPTER 1 INTRODUCTION	1
1.1. Background of Internship	1
1.2. Objective of Internship	1
1.3. Location and Internship Duration	2
CHAPTER 2 COMPANY BACKGROUND	
2.1. Company Profile	
2.2. Organizational Structure	
2.3. Management of the Company	9
CHAPTER 3 COMPANY SYSTEM	11
3.1. Business Process.	11
3.2. Products	
3.3. Production Processes	12
3.4. Production Facilities	15
CHAPTER 4 INTERNSHIP ASSIGNMENT	17
4.1. Assignment Scope	17
4.2. Rights and Responsibilities in the Assignment	20
CHAPTER 5 INTERNSHIP FIRST PROJECT	22
5.1. Methodology to Complete the Assignment	22
5.2. Study the current layout	22
5.3. Set Goals	22

5.4. Identifying the Cause of Errors	23
5.5. Result of Internship Assignment	24
CHAPTER 6 INTERNSHIP FIRST PROJECT	25
6.1. Methodology to Complete the Assignment	25
6.2. Study the current spreadsheet	25
6.3. Set Goals	25
6.4. Identifying the Cause of Errors	25
6.5. Result of Internship Assignment	31

#### LIST OF TABLES

Table 2.1. Method Department Job Description	8
Table 3.1. Production Facilities	15
Table 4.1. Area of Responsibility	17
Table 4.2. Task and Project	18

#### LIST OF FIGURES

Figure 1.1. Schneider Electric Sites Location	2
Figure 2.1. Schneider Electric Logo	4
Figure 2.2. Schneider Electric Product	5
Figure 2.3. Schneider Electric Operation	5
Figure 2.4. Schneider Electric Certification	6
Figure 2.5. Plant Organization Structure	7
Figure 2.6. Method Department Organization Structure	8
Figure 3.1. Low Voltage Product	12
Figure 3.2. Medium Voltage Product	12
Figure 3.3. Low Voltage Production Process	13
Figure 3.4. Medium Voltage Production Process (continue)	14
Figure 5.1. Methodology	22
Figure 5.2. Schneider Electric Layout	24
Figure 6.1. Methodology	25
Figure 6.2. UG PIX File.	26
Figure 6.3. UG PIX Table	27
Figure 6.4. Choice Grid File	28
Figure 6.5. UG PIX Table	
Figure 6.6. Choice Grid File	29
Figure 6.7. Choice Grid File Chategory	29
Figure 6.8. Notepad	
Figure 6.9. DT PIX 24 File	30
Figure 6.10. Result of UG Number PIX	31

#### **APPENDIX**

**Appendix 1. Method Department Business Process** 

**Appendix 2. Schneider Electric Product List** 

**Appendix 3. Trainee Attendance Record** 

Appendix 4. Working Activities Daily Log

## CHAPTER 1 INTRODUCTION

In this chapter, the background, objective, placement, and the duration of the internship will be explained comprehensively.

#### 1.1. Background of Internship

Department of Industrial Engineering, Universitas Atma Jaya Yogyakarta (PSTI UAJY) defines the internship as a simulator that enables the students not only to apply the Industrial Engineering knowledge into the real-world industry but also to train the student how to be a professional of Industrial Engineer. For this purpose during the internship, the students are requested to work in the host company within a period of month.

The paradigm of the internship is that the students are expected to experience the application of Industrial Engineering knowledge in practice in which it can be obtained if during their internship the students do some activities to enhance their understanding in term of planning, designing, improving, implementing and problem-solving. Therefore during the internship period, the students are requested to:

- a. Doing all the tasks that have been assigned by the host company.
- b. Following all of the relevant working procedures of the host company.
- Capturing the big picture of the enterprise system in the host company and observing its characteristics.

Since Industrial Engineer is dealing with the integrated system of some elements which are Man, Machine, Material, Methods, Money, Energy, Environment, and Information, therefore during the internship the students should relate all of their activities in term of system perspective. Based on the explanation above, it is clearly seen that internship is not only gathering the data.

According to Document Curriculum of PSTI UAJY, an internship is an academic course in which the students should register for the course for 3 credits. Then, in order to fulfill the academic requirement of the internship, the students are required to submit an internship report. The performance of the student itself is evaluated both by an on-site supervisor and by the faculty supervisor.

#### 1.2. Objective of Internship

The objective of the internship are:

- a. Practice discipline
- b. Improve the interaction between student and his/her ordinate or workmate
- c. Practice adaptability in the working atmosphere
- d. Observe the daily work in the host company
- e. Enhance the Industrial Engineering knowledge in practice by seeing the practical work in the host company
- f. Enhance the knowledge of enterprise system

#### 1.3. Location and Internship Duration

The internship was conducted in PT. Schneider Electric Indonesia, Cikarang Factory East Jakarta Industrial Park (EJIP) Plot 4 B No. 1-2 Lemah Abang – Bekasi, Indonesia.

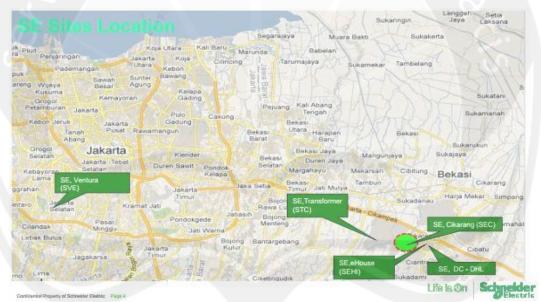


Figure 1.1. Schneider Electric Sites Location

The internship was conducted for five months, started from January 30<sup>th</sup>, 2017 to July 1<sup>st</sup>, 2017.

#### 1.3.1. Job Placement And Job Assignment

The author was assigned in Method Department in under the supervision of Mr. Adi Widiadi. In the department, the author was responsible for Drawing the Equipment and Layout to support Method Department under the guidance of Mr. Adi Widiadi. In the first month, the author was given several tasks, one of them

was to understand and use Google Sketchup to drawing equipment. Afterward, the author was tasked to drawing layout with Autocad 2010. To look detail of all author task in PT. Schneider Electric Indonesia, the author will attach the daily activity in PT. Schneider Electric Indonesia during the period of internship.



# CHAPTER 2 COMPANY BACKGROUND

The background of the company in which the author worked as an intern will be explained in this chapter.

#### 2.1. Company Profile

PT. Schneider Electric Indonesia is a global company in the field of energy management and automation. Schneider Electric is a multinational company that produces tools and electrical technology system, which has its headquarters in France. Schneider Electric itself was founded by two brothers, namely Eugène and Adolphe Schneider initially, they both acquired a foundry in Le Creusot, France. In this factory, they focus on doing business in the heavy equipment industry such as ship equipment, railroads, etc.

Eugene and Adolphe remain consistent to create a business, by forming an alliance of family is very strong, the successor to Eugene and Adolphe springing up, businesses that run choppy, until at some point they were in alliance with other companies. Joining Merlin Gerin, Telemecanique and Square D also make "Schneider Group" when it was decided to focus on doing business in the power sector. Schneider Electric are the iron and steel industry, heavy machinery, and ship building in the 19th century. Electricity and automation management in the 20th century. In 170 years of existence, Schneider Electric has risen to numerous challenges and made major strategic choices to become a leader.



Figure 2.1. Schneider Electric Logo

## Manufacturing Activities at Cikarang Plant

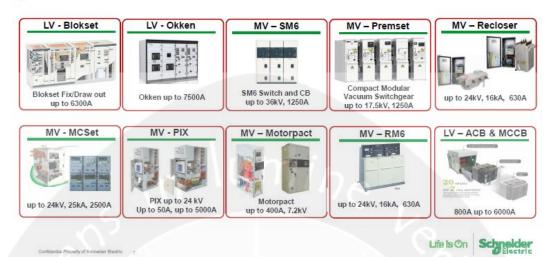


Figure 2.2. Schneider Electric Products

Schneider Electric operation can be seen in the following figure:



Figure 2.3. Schneider Electric Operation

The above figure shows Schneider electric operations. Schneider Electric operation is divided into two, low voltage and medium voltage. The flow process both of operation are same. From incoming inspection & material storage to mechanical assembly to install components & wiring to quality check & testing to fat and fat meeting room to the last that is packing & delivery process.

#### 2.1.1. Schneider Electric Indonesia

In Indonesia, Schneider Electric has been established since 40 years. Schneider is known as a manufacturer of power tools for system protection, such as MCB (miniature circuit breaker), contactor, Panel electrical medium voltage, etc., especially after they acquired Areva, further solidify the position Schneider as a provider of power tools for system electricity in the distribution network. Schneider Electric not only want to be known as MCB trader but, Schneider Electric in other sectors such as electrical equipment for systems automation and energy monitoring. With the acquisition of Modicon Telemecanique, Tac, Citect SCADA, Control Microsystems, and the last Invensys. Currently Schneider Electric has a very broad scope solution for the electrical system, not only protection system but also the systems automation and energy monitoring.

Schneider Electric itself has several factories in Indonesia to produce electric tools, which are in Pulogadung for the production of panels (1 Factory), Cikarang for the production of panels (1 Factory), Cibitung for the production of Travo, MCCB, and ACCB (2 Factory). But now, Schneider Electric making an improvement to their factory become efficient with move a building and equipment including the process each product in pulogadung and Cibitung to cikarang factory. So, cikarang factory now produces Panel, MCCB, and ACCB and Cibitung only produce Travo. The other plant is in Batam, which focus more on producing electronic components such as sensors, DC Drive, etc. The head office of Schneider Electric Indonesia itself is in Cilandak.

# We Certified for ISO 9001: QUALITY OHSAS 18001: SAFETY ISO 14001: ENVIRONMENT ISO 50001: ENERGY ISO 50001: ENERGY Life Is On Schneider Life Is On L

Figure 2.4. Schneider Electric Certification

As a global company Schneider Electric implement management system:

- a. ISO 9001:2015 about Quality Management System
- b. ISO 14001:2015 about Environment Management System
- c. ISO 50001:2011 about Energy Management System
- d. OHSAS 18001:2007 about Safety Management System and Occupational Health
- e. SMK3 about Safety Management System and Occupational Health in accordance with the requirements of the Ministry of Manpower and Transmigration.
- f. LMK certification about SPLN
- a. TKDN certification about Level of domestic content

#### 2.1.3. Achievement

Schneider Electric's Award:

- a. Award from Minister energy & minerals resources for implementing energy management system
- b. The Winner of SNI Award 2013
- c. Nominee SNI Award 2014
- d. Gold Winner SNI Award 2015 (6 gold)
- e. Gold Winner SNI Award 2016

#### 2.2. Organizational Structure

The author was assigned in Method department operation during the internship period. The organization of the plant and the department can be seen in the following figure.

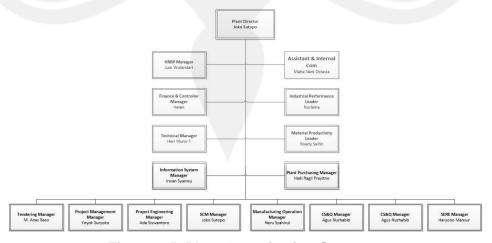


Figure 2.5. Plant Organization Structure

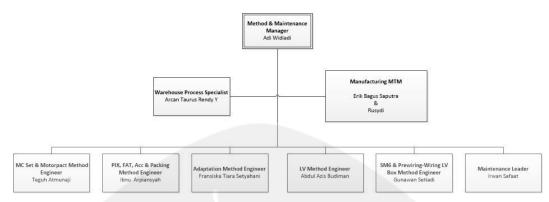


Figure 2.6. Method Department Organization Structure

Job description for each position in Method Department will be explained in the following table.

**Table 2.1. Method Department Job Description** 

No.	Position	Job Description
1.	Method & Maintenance Manager	To plan organize method and maintenance organization including people developments to meet requirements, To prepare and update operational plan for industrial engineering action plan, including Capex and expenses budget and monitoring, etc.
2.	Warehouse Process Specialist	To study and analyze the process in the production line and initiate necessary improvement, To establish a network with other plants engineers of the same field of interest to share best practices information, and etc.
3.	Manufacturing MTM	Lean Mfg SPS, predetermine standard time of production, to measure std time of assy process, optimize time (reduce DT) & Setup database of std time per product family as a reference.
4.	Maintenance Leader	To minimize downtime in production by doing preventive maintenance complete on time greater than 90%, To always consider hazards and environmental aspects, identify hazard in

**Table 2.1. Method Department Job Description (Continue)** 

No.	Position	Job Description		
		the workplace and to ensure the work process		
		and its result comply with SHE requirements,		
		and etc.		
		Industrial strategic, making layout/relocation,		
		capacity, productivity, and repair factory. Also		
5.	Method Engineer	responsible on simulation activity or manufacture		
	in	(standard time analysis, industrialization, cost		
	6	analysis).		

#### 2.3. Management of the Company

Schneider Electric's vision and mission are stated as the following: *Vision:* 

A world where we can all achieve more while using less of our common planet.

#### Mission:

Helping people make the most of their energy become the global specialist in energy management and management and automation making it become safe, reliable, efficient, connected, and sustainable.

As a multinational company, Schneider Electric believes that attracting talented and diverse workforces is one of the keys to its success. By creating an environment which offers professional and intellectual challenges, which encourages innovation and creativity that leads to success and effective teamwork for its employees, Schneider Electric hopes to achieve its vision.

Schneider Electric also encourages its employees to continue developing their skills and furthering their educations as well as taking part in the improvement of the workplace. Schneider Electric offers Educational Reimbursement Plan that provides employees with financial assistance as they pursue undergraduate and/or advanced degrees. The employees are also encouraged to attend Technical Training (regular training, upgrading skill, and mentoring & coaching), operator versatilities and flexibilities program, energy efficiency program, external seminar, an internal seminar which is related to their jobs and safety induction training for employees and visitor. Not only the employee but Schneider Electric

also give a program to their suppliers, training & develop supplier and Supplier workshop are the name of the program. Schneider Electric also offers a cooperative education program to help students all around the world to experience international and professional working atmosphere and to build their career path. Schneider electric's corporate social responsibility (CSR) is Schneider goes to school and Schneider care program.

The employees and workers satisfaction are also kept by providing supporting facilities for them. Schneider Electric provides pantry, kokarsi, canteen, lactation room, polyclinic, prayer room (Mosque), and free internet for the employee.

## CHAPTER 3 COMPANY SYSTEM

The nature of the company in which author worked will be explained in this part of the report.

#### 3.1. Business Process

Method department receiving task from plant director than method department manager give the task to the method engineering for each task and each part/line area. After method engineer receive the task from the manager, the engineer doing their task. When the engineer find the problem, they are making schedule with the manager. They are discuss about several option problem solving to the manager than they ask which one of the problem solving is good to apply in their case. The engineer always giving information about all the task that they do to the manager and inform the progress too. After each engineering solve the problem, they are give the result to the manager and to each another department depend on what they need. For example, method engineer send the project "PIX Panel" to the Quality department to check the quality, send to safety / SERE to check the project are already same with the safety policy or not, send to purchasing for giving information what method engineering needs to purchase, send to production to execution or making the panel, send to scm about material that they need (checking in rack/inventory or just order to the purchasing department. When method department need the material they will call the supplier directly. After the project fisnish, the product will send to the customer. Than the project line area will receive the Auditing from the auditor in time is not certain.

#### 3.2. Products

Schneider Electric's product divided by two categories:

Low Voltage Products:

1. Okken Evo: Up to 7500A

2. LBS-Blokset: Blokset fix / Draw out Up to 6300A

3. ACB (Adaptation): 800A up to 6000A

4. MCCB (Adaptation): 800A up to 6000A

Medium Voltage Products:

1. PIX (Primary): Up to 24 kV, up to 50A, up to 5000

- 2. MC SET (Primary): Up to 24 kV, up to 25A, up to 2500A
- 3. MOTORPACK (Primary): Up to 400A, up to 7,2 kV
- 4. SM6 (Secondary): Switch and CB up to 36 kV, up to 1250A
- 5. RM6 (Adaptation): Up to 24 kV, up to 16 kA, up to 630A
- PREMSET (Adaptation): Compact Modular Vacum Switchgear up to 17,5 kV, up to 1250 kV
- 7. RECLOSER (Adaptation): Up to 24 kV, up to 16 kV, up to 630A

#### 3.2.1. Low Voltage Panel

Low voltage panel is a panel that has range until 1 kV.



Figure 3.1. Low Voltage Product

#### 3.2.2. Medium Voltage Panel

Medium voltage panel is a panel that has a range above 1 kV and below 100 kV.



Figure 3.2. Medium Voltage Product

#### 3.3. Production Processes

Schneider Electric's production process follows the general production process. The production process divided by two departments that are Low Voltage and

Medium Voltage. Both of products have differences in volt characteristics that very impact the product making process. If the voltage in some panel is high, so the making process of the panel is more difficult. Below is the flow process for each product:

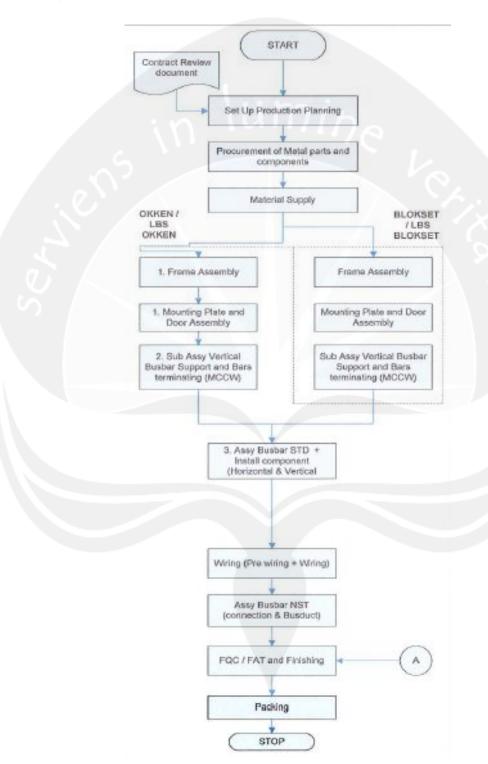


Figure 3.3. Low Voltage Production Process

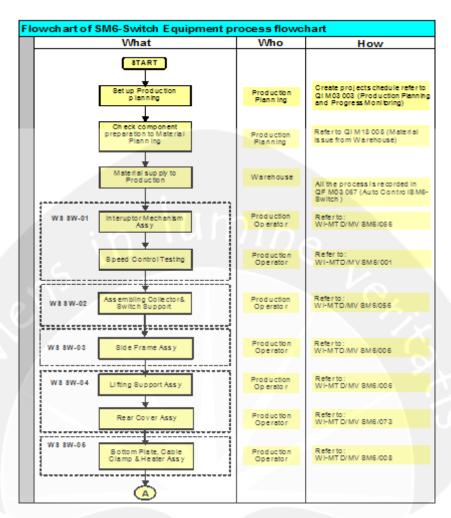


Figure 3.4. Medium Voltage Production Process (continue)

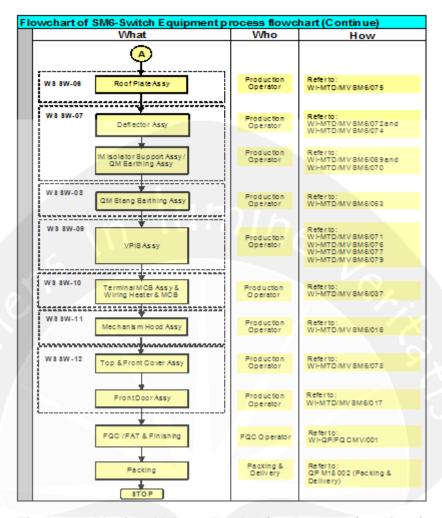
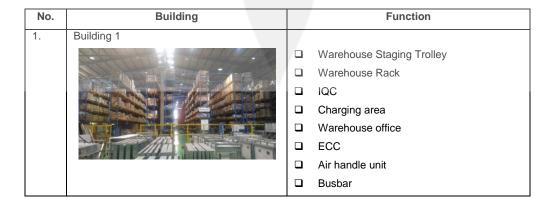


Figure 3.4. Medium Voltage Production Process (continue)

#### 3.4. Production Facilities

Production facilities in Cikarang located in East Jakarta Industrial Park of Indonesia are the main site where all production process is conducted. The facilities in the function will be shown in the following table.

**Table 3.1. Production Facilities** 



**Table 3.1. Production Facilities (Continue)** 

No.	Building	Function		
			Maintenance area	
2.	Building 2			
			SM6 (SW and CB)	
			CB Adaptation	
			Training Corner	
			FQC SM6	
			Finishing Area	
	63-			
0	Dellation		116	
3.	Building 3		Lawa Malka ara Arra a (Olympian A. Olympian B.	
	至		Low Voltage Area (Cluster A, Cluster B,	
			Cluster C, Cluster D, Cluster E)	
			Drawer	
			FAT office	
			Staging finish good sm6	
4.	Building 4			
V			PIX	
り			MC Set	
			Mccb, Acb	
			Motorpack	
			FAT	
	The state of the s			
5.	Building 5			
J.	Dallang 0	6	FAT	
			RM6	
	MODERALIS III IN THE PRINCE OF		Premset	
			Prototype	
		0	Obeya, 36Kv + PIX Adaptation,	
			Competency Center	
			Recloser and LBS	
			RM6 Testing	
			3	

#### **CHAPTER 4**

#### INTERNSHIP ASSIGNMENT SCOPE AND RESPONSIBLE

The assignments that have been given to the author during the period of internship will be explained in this chapter.

#### 4.1. Assignment Scope

AREAS OF RESPONSIBILITY

The author was assigned in Method department during the internship period. Method department is the department that has responsible with every industrial strategic, making layout/relocation, capacity, productivity, and repair factory. Also responsible for simulation activity or manufacture (standard time analysis, industrialization, cost analysis).

Table 4.1. Area of Responsibility

LEVEL MEASUREMENT

AREAS OF RESPONSIBILITY	LEVEL	WEASUREWENT
(Describe the nature, scope, level of improvements to	*(Full, Partial,	(Quantitative or quality criteria
new ideas, etc.)	Supportive)	to achieve responsibility)
To Regularly analyze the KPI result of the	7 /	
production line he/she in charge in order to	Partial	Industrial KPIs
prepare an action plan for improvement.	i aitiai	
To ensure that all Lean Mfg SPS-based activities		
are well implemented & respected in the	Full	SPS line score
production line he/she in charge.	T dil	Of O line score
To collaborate with MTM Engineer to		
predetermine standard time of production, to		
measure std time of assy process, optimize time	Partial	DT, Standard Time
(reduce DT) & Setup database of std time per		
product family as a reference.		
To manage new investment and change in	Full	IE
production process	i dii	IL.
To study and analyze the process in the		
production line and initiate necessary	Full	IE
improvement.	/	
To develop and update manufacturing file:	Full	Work Instructions available
Working Instructions for all production lines.	i dii	Work instructions available
To co-lead (w/THS) assembling a prototype of		Flow Process available,
new product type (emphasizing process flow &		IE
productivity).		IE IE
To collaborate with maintenance operators for	Partial	Tools calibrated, tools
any action that needs support from Maintenance.	i aitiai	availability, downtime
To regularly carry out VSM, LADM or any other	Partial	Industrial KPIs

Table 4.1. Area of Responsibility (Continue)

#### AREAS OF RESPONSIBILITY **LEVEL MEASUREMENT** (Describe the nature, scope, level of improvements to \*(Full, Partial, (Quantitative or quality criteria new ideas, etc.) Supportive) to achieve responsibility) tool in order to measure the performance of the production line. To collaborate with Purchasing to get the best alternatives of suppliers for optimum productivity Partial Productivity in each improvement project (action). To establish a network with other plants engineers of the same field of interest to share Partial Industrial Excellence Level best practices information. To develop his/her People (Communication) Skill in order to persuade people in order to bring out Solid Project Team. Project Partial their best performance of him/her or his/her Result Team. To ensure that SHE (Safety, Health, and NDL, Frequency Rate and Environment) is always considered in Partial Seriousness Rate, 6S improvements or changes implemented in Score production lines.

\*Full : Fully responsible for the results of the work
Partial : Partially responsible for the results of the work

Supportive : Provide support to the person accountable for the results of the work.

MTM : Method Time Measurement

The author was given the several tasks from the company. the task that given to the author are different. All the task that author work from method department, SERE Department, Manufacturing Leader Manager, Quality Control Department, THS Department.

Table 4.2. Task and Project

No.	Task and Project	No.	Task and Project
1.	Making a label to support	6.	Discuss and Drawing new layout for
	Kanban system in		air handling unit area, Staging
	Production Area.	V	warehouse trolley, sm6 36kV, obeya,
		Υ	automation, competency center, New
			RM6.
2.	Drawing equipment with	7.	Order Jig to the supplier.
	Sketchup.		

Table 4.2. Task and Project (Continue)

No.	Task and Project	No.	Task and Project
3.	Drawing layout with	8.	Calculate the cycle time in adaptation
	Autocad.		area to order new trolley.
4.	Production Tracking 2017.	9.	Order New Trolley to the supplier.
5.	Making Value Stream	10.	Making spaghetti chart of the
	Mapping (Current and		warehouse.
	Future state).	1 5-	
11.	Drawing New Trolley.	26.	Making Forklift route by using
	٠ ١١٠٠		Autocad.
12.	Making tools for support	27.	Drawing Air Pipe location by using
	VSM Meeting.		Autocad.
13.	Making Scenario for PIX 1	28.	Update the plant dashboard each
	and PIX 2 video.		month.
14.	Making Demo Video of PIX	29.	Organize consumable bin and cable
ら			duct.
15.	Trial Software Barcode.	30.	Write all worker activity of the PIX
			Post E and Post F.
16.	Audit Busbar and Adaptation	31.	Organize the Go Wet Ticket for
	area.		"Schneider Gathering".
17.	Training PKL Student.	32.	Adding the fence for the RM6 Testing
		· ·	area and warehouse staging trolley
			area.
18.	Checking task of PKL	33.	Input PIX Data of THS department.
	Student.		
19.	Relayout Office for the hot	34.	Placement the table of Warehouse
	room, manager room, and		leader.
	Wudhu area.		
20.	Making Plat for APD Board.	35.	Making a list of scrue table.
21.	Checking stock of	36.	Marking line area based on SEC
	consumable material in the	7	layout.
	warehouse.		
22.	Reformat form Production	37.	Support all of the method engineers.
	tracking 2017.		

Table 4.2. Task and Project (Continue)

No.	Task and Project	No.	Task and Project
23.	Making route for a grand	38.	Making layout of evacuation area
	opening in Autocad.		with Mr. Baskoro
24.	Making Tag Name for the	39.	Clear the UG PIX in choice grid PIX
	customer.		12, 17, 24, 40, and 50
25.	Training Operator for		
	labeling.	r In	

The author was given the several tasks. One of the tasks is about making layout and relayout with Autocad 2010. This task including measure each area, sketch area, name the area, giving color, giving layer, giving dimension, and making PDF at the end of the project. And for several area or building need to be printed with size A3.

The author also gave the task to drawing the tools and equipment in Project P to Ci to support Mr. Nurul's project before the deadline, that is "Grand Opening of PT. Schneider Electric Cikarang".

#### 4.2. Rights and Responsibilities in the Assignment

This rights and responsibilities the author had during the period of internship and project will be explained in this sub-chapter.

#### 4.2.1. Rights

The author was allowed to:

- a. Visit all plant area
- b. Measure all plant area
- c. Photo all plant area
- d. Sketch all plant area
- e. Got the Access ID, safety vest, and safety shoes
- f. Access the UG PIX file

#### 4.2.2. Responsibilities

The role of industrial engineers are Design, Install, and Improve. Design is the first role which IErs must creatively combine their skills and knowledge in designing a better system. This could be a production system, service systems or a solution system. A system of solution is a way to deliver a multi-approach,

multi-disicpline and multi-dimension solutions. This "multi" solutions are needed especially while facing a complex problems. The second role, Install is be able to define task and activities needed to install the systems. With this ability, they were forced to think ahead when designing the systems. So both are interrelated. Improves is also the same as management. Management experts believe that there is a different between administration and management. Administration focuses on the efficiency of repeating processes or services. Management improves the efficiency and effectiveness of administrations and other systems. Therefore, problem solving skills are very important. As an engineer, the author was responsible to design a layout and relayout of the Schneider Electric Cikarang Plant. Also, responsible to improve the UG PIX data by finding, checking, and solving the data. The author was also obliged to keep the information and documents related to the project confidential.

# CHAPTER 5 INTERNSHIP FIRST PROJECT

The first assignment that have been given to the author during the period of internship will be explained in this chapter.

#### 5.1. Methodology to Complete the Assignment

To complete the assignment, the first thing that the author did was to study the AutoCad 2010 and visit all plant area. After the software and plant area were understood, the next thing to do was to find the possible cause of errors and list them. During the project, the author also took the notes to the things that can be added into the process of making a layout. The framework of this project can be seen in figure 4.1. below.

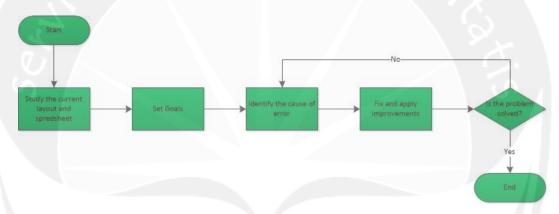


Figure 5.1. Methodology

#### 5.2. Study the current layout and spreadsheet

AutoCAD is a commercial computer-aided design (CAD) and drafting software application. AutoCAD is software to help the user to make a sketch or design of some object. In this case, the author using the AutoCAD to drawing the layout. To make the layout, the author needs to visit all plant area to know the main image before starting to drawing the layout in AutoCAD. In visiting each area the author must be careful in see the current area. And when the area was change, the author must be relayout in the AutoCAD or in another case the author needs to be relayout the current area in the location and draw the new layout in AutoCAD.

#### 5.3. Set Goals

Based on the current situation in the location, the desired result of the project would be to fix the current layout and relayout in AutoCAD 2010 by following the current condition in the plant area.

#### 5.4. Identifying the Cause of Errors

In order to identify the cause of the error, the relationships among the area must be understood. To identify the cause of the error, the author must measure the corner of the area. To make sure the author was not mistaken in order to make the layout, the author sketch every area in notes. Because the plant area is like box which has 4 sides, the author must be measured, photo, sketch start from 1 side. The author draws the layout start from the left side that is from Busbar Area to charging area.

From the explanation above, the easiest way to identify the cause of the error is to check on the left side and right side area in AutoCAD. If the size of the left and right side are not the same or too long the size more than the tolerance that is false or the author must measure the area again. The cause of errors will be explained according to the result.

#### 5.4.1. Measuring

The author must measure each area by using the distance measuring device. In measuring the area the author must be careful. Each area has a different size and sometimes several areas cannot be measure because of another equipment or machine.

#### 5.4.2. Sketch

In sketch each area, the author must bring the notes to sketch and put the number of size from measuring the area in the notes. In the sketch the area, the author must sketch the real situation in the location. The author must be written and sketch area name, line color, machine name, and the size each area.

#### 5.4.3. Taking photo

Taking photo is the step to make sure that the author writes and sketch in the notes are right. The author photo the area from several sides to make clear the detail of each area.

#### 5.4.4. Modifying the current layout

In modifying the current layout, the author got the task to make a new sketch area than making the drawing layout of the area by AutoCAD.

#### 5.5. Result of Internship Assignment

The goal of this project was to design a layout and relayout in plant area. The author makes the detail by sketch, photo, and measure each area. The main focus of this project is to draw the current layout. But, any several areas that author made by future area condition like sm6 36kV, obeya, competency center, automation area, RM6 area, and air handling unit area. And another main focus is to determine product type from choice grid with UG number. After the author finish the project, company using the author's project.

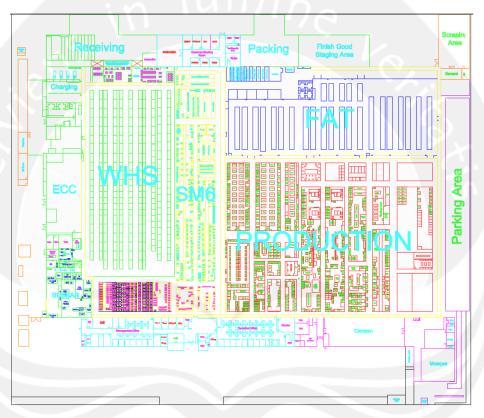


Figure 5.2. Schneider Electric Layout

## CHAPTER 6 INTERNSHIP SECOND PROJECT

The second assignment that have been given to the author during the period of internship will be explained in this chapter.

#### 6.1. Methodology to Complete the Assignment

To complete the assignment, the first thing that the author did was to study the UG Number and Choicegrid data. After the UG Number and Choicegrid data were understood, the next thing to do was to find the possible cause of errors and list them. The framework of this project can be seen in figure 4.1. below.

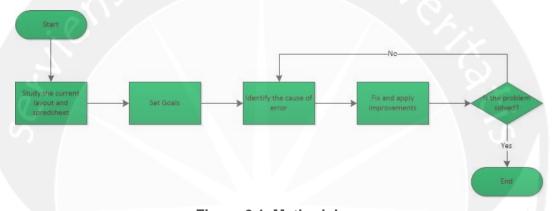


Figure 6.1. Methodology

#### 6.2. Study the current layout and spreadsheet

UG Number is a product code. To improve the UG PIX data by finding, checking, and solving the data need several information such as chapter, where the product exist (DT PIX 12/17/24/M40), weight, width, etc. To start looking for the product type, the author have to study the current data and study each element for.

#### 6.3. Set Goals

Based on the current data, the goal of this project was to improve the UG PIX data by finding, checking, and solving the data.

#### 6.4. Identifying the Cause of Errors

In order to identify the cause of the error, the relationships between the data must be understood. To identify the cause of the error, the author need to:

#### 6.4.1. Organize the PIX UG Number

Open the UG PIX file. Then, organize the data that have no result on "UG CG-16".

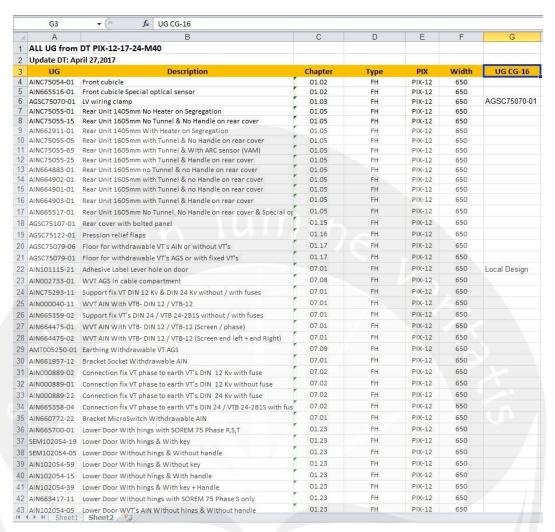


Figure 6.2. UG PIX File

Making table with description (UG, description on choice grid, description from STR, chapter, and description).

Fill the table with UG number that doesn't have a result and already organize.

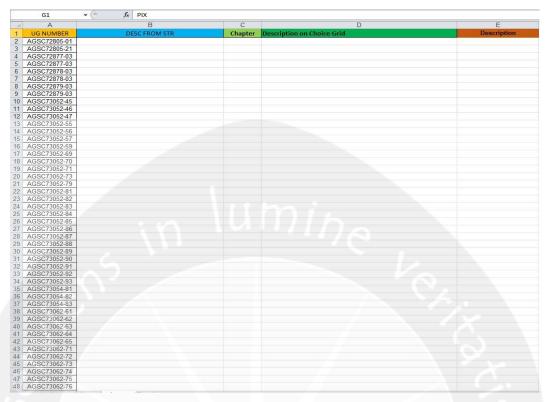


Figure 6.3. UG PIX Table

#### 6.4.2. Find the problem

Open excel file of New sheet that have no chapter and description with file of choicegrid 12, 17, 24, and M40. Than copy and paste one by one each UG Number in choicegrid excel file to find the the chapter and to know how much chapter in one UG Number that have different chapter. After the author find the chapter of UG Number than the author write the chapter with choose the top of the colour in finding the chapter in New sheet before. When all the chapter of UG Number already finding, the author open the choicegrid file again to find the information that need to write in notepad. After that, the author find the information about the type product from UG Number to DT PIX file. DT PIX 12, DT PIX 17, DT PIX 24 are the file for looking for the product type. If the UG number that author find doesn't exist, it means that author product type never exist. If the author find it, than the author just put in the product type in new sheet before.

Open file of "choice grid". Then, find the "description on choice grid" and "chapter". "description on choice grid" is on the top of the chapter that author looking for. For example in this image in the top of chapter 05.17 voltage indicator

display. If in columns of "sheet" any more than one option, than just choose one every different chapter.

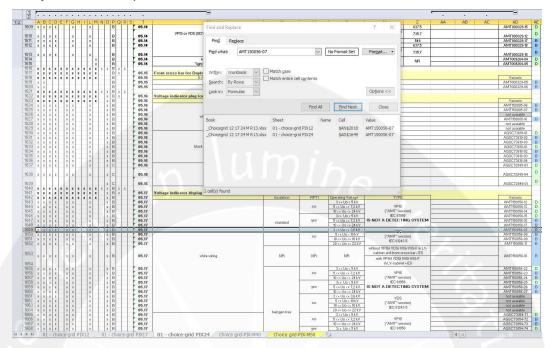


Figure 6.4. Choice grid file

Than fill the table with "chapter" and "description on choice grid" that already found.

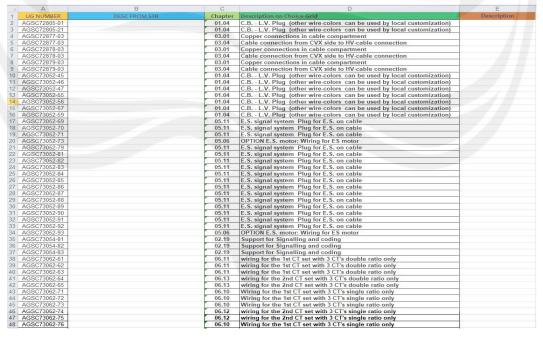


Figure 6.5. UG PIX Table

Look back to the previouse file, than write all data in the row of the UG number in notepad. Next, look at left side of row that author looking for. Look at description on the top of sheet from data "x" to indicate where the product type.

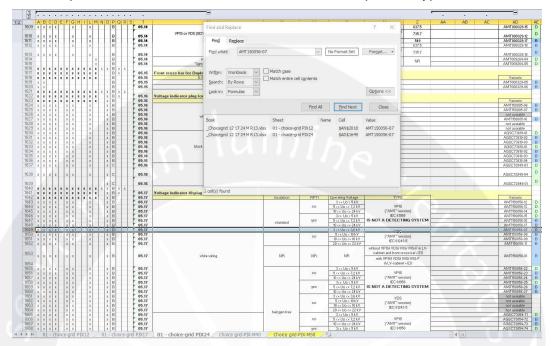


Figure 6.6. Choice grid file

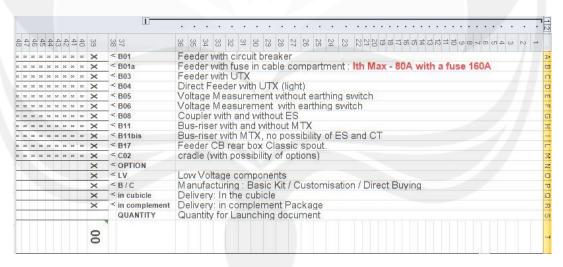


Figure 6.7. Choice grid file chategory

```
Untitled - Notepad

File Edit Format View Help

AMT150056-07
05.17
3 <= Uo <= 3,6 kV

800FL (

PIX 12

PIX 24
```

Figure 6.8. Notepad

## 6.4.3. DT PIX 12, 17, 24

Open the file of DT PIX (12, 17, dan 24) according the description in the "Sheet". for example 01 - choice-grid PIX24 (show the location in DT PIX 24 file).

Open sheet according to the data in the notepad before, find the data of UG number by using the number of chapter.

The data that can be accepted only in green background.

Then, look the right side of the row in the blue line. That is the result. If ther is any UG Number, it means that the UG number before have to change become AINN04454-22.

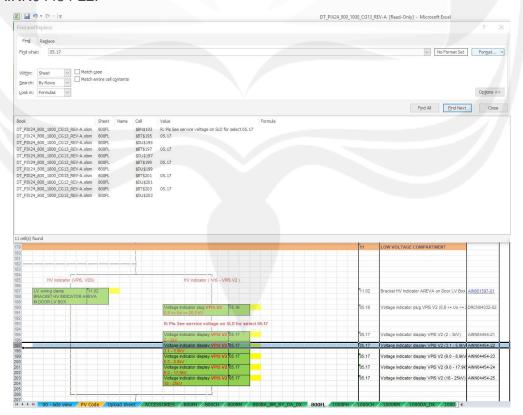


Figure 6.9. DT PIX 24 File

In this example author found two different chapter (05.17 and 04.21). Before, 05.17 already got the result if the UG Number have to change and about looking for the result of UG number of chapter 04.21 could be the same as like looking for UG number of chapter 05.17. The result of 04.21 is never used (OPTION ES on busbar (on top): Voltage indicator display) because the result is not found in the file of DT PIX.

### 6.5. Result of Internship Assignment

The result of this project is there are 24 UG Numbers that empety product or unused product with yellow color in the table and another UG Number was change by new UG Number. The goal of this project was to to improve the UG PIX data by finding, checking, and solving the data. The author using choicegrid data to improve the UG PIX. By finding the chategory needed, checking all the product availibility, and solving by changes the UG Number with new UG Number or giving the yellow color for empety product. After the author finish the project, Mr. Ferdy using the author's project.

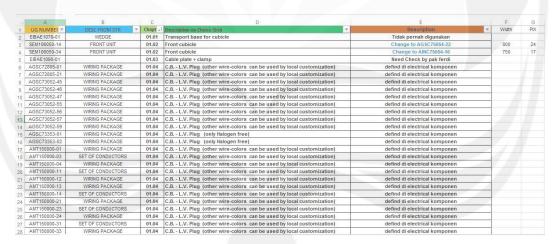


Figure 6.10. Result of UG Number PIX



Figure 6.10. Result of UG Number PIX (Continue)

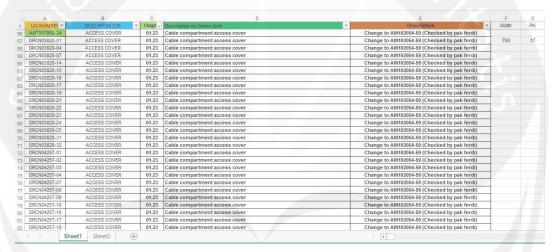


Figure 6.10. Result of UG Number PIX (Continue)

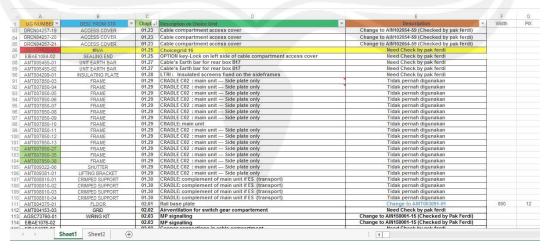


Figure 6.10. Result of UG Number PIX (Continue)

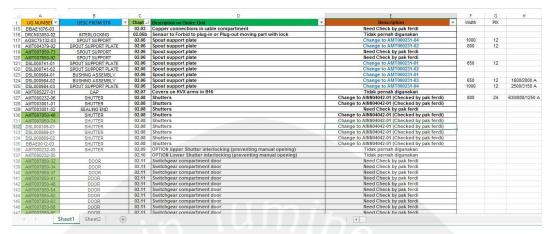


Figure 6.10. Result of UG Number PIX (Continue)

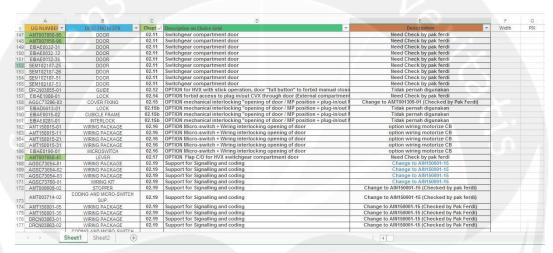


Figure 6.10. Result of UG Number PIX (Continue)

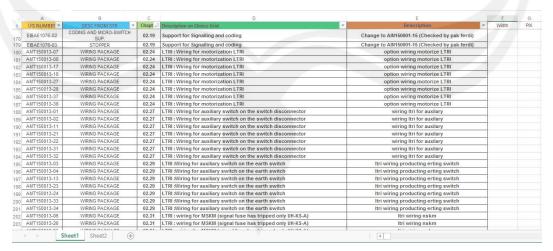


Figure 6.10. Result of UG Number PIX (Continue)

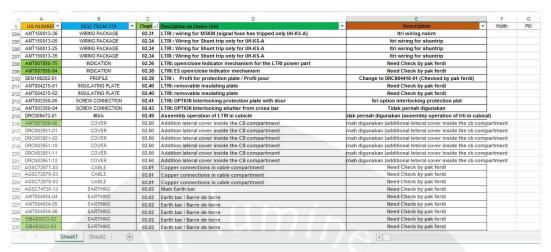


Figure 6.10. Result of UG Number PIX (Continue)

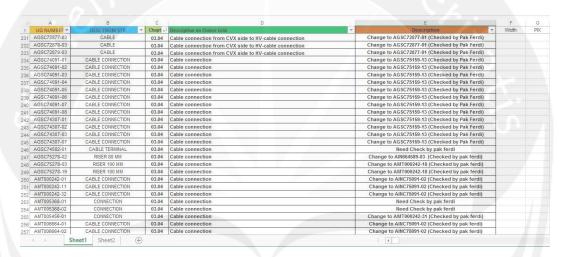


Figure 6.10. Result of UG Number PIX (Continue)

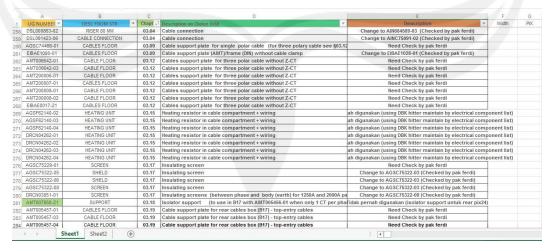


Figure 6.10. Result of UG Number PIX (Continue)

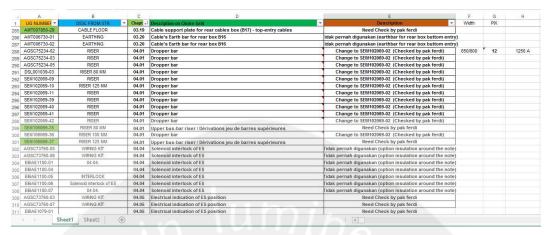


Figure 6.10. Result of UG Number PIX (Continue)

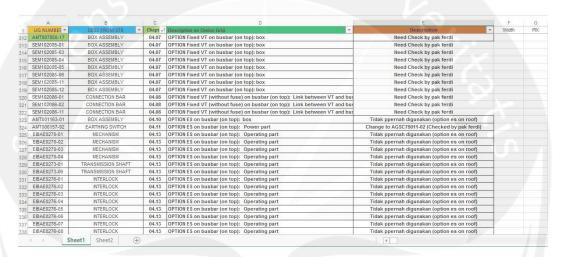


Figure 6.10. Result of UG Number PIX (Continue)

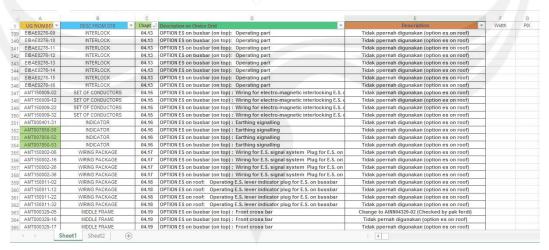


Figure 6.10. Result of UG Number PIX (Continue)

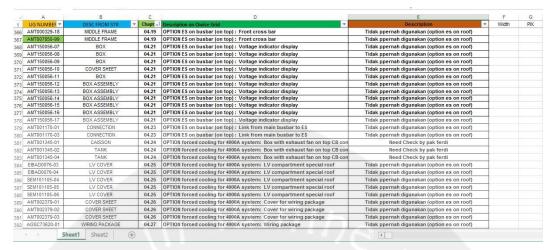


Figure 6.10. Result of UG Number PIX (Continue)

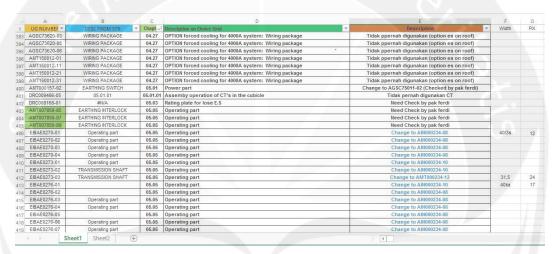


Figure 6.10. Result of UG Number PIX (Continue)

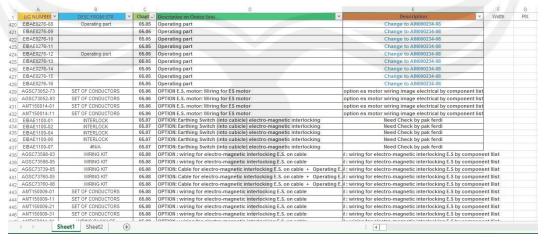


Figure 6.10. Result of UG Number PIX (Continue)

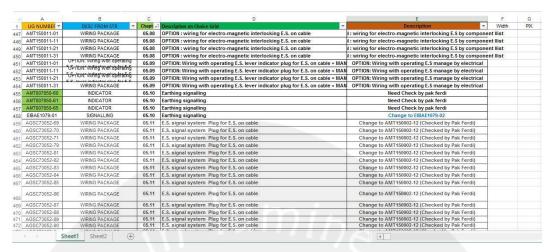


Figure 6.10. Result of UG Number PIX (Continue)

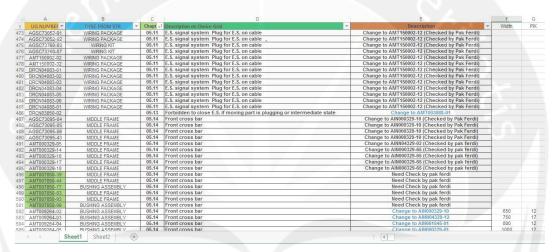


Figure 6.10. Result of UG Number PIX (Continue)

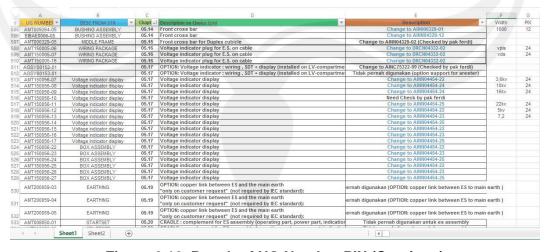


Figure 6.10. Result of UG Number PIX (Continue)

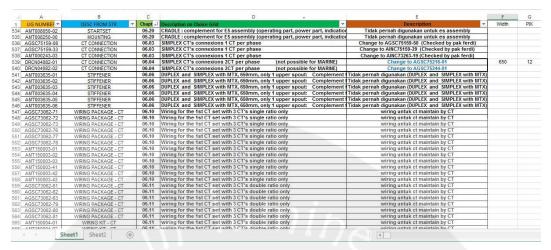


Figure 6.10. Result of UG Number PIX (Continue)

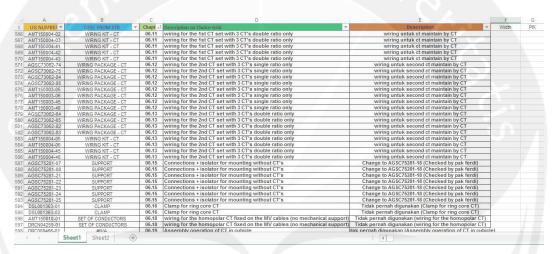


Figure 6.10. Result of UG Number PIX (Continue)

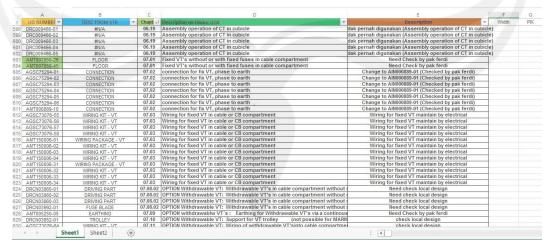


Figure 6.10. Result of UG Number PIX (Continue)

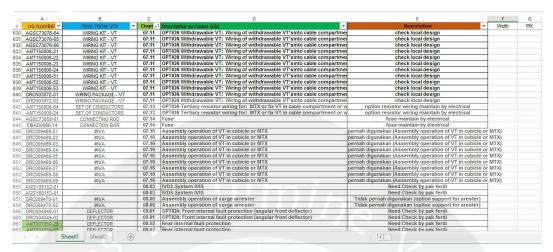


Figure 6.10. Result of UG Number PIX (Continue)

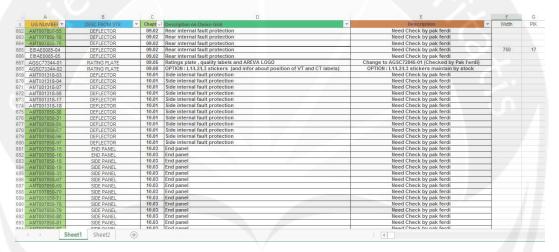


Figure 6.10. Result of UG Number PIX (Continue)

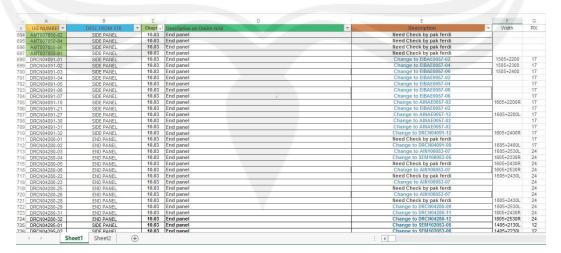


Figure 6.10. Result of UG Number PIX (Continue)

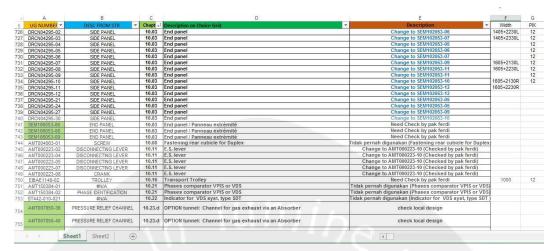


Figure 6.10. Result of UG Number PIX (Continue)

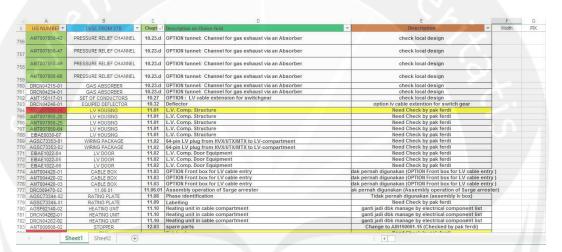


Figure 6.10. Result of UG Number PIX (Continue)

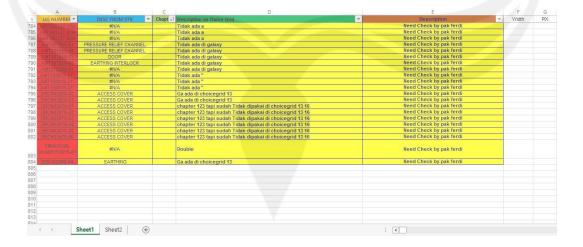
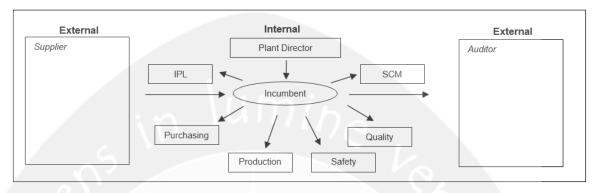


Figure 6.10. Result of UG Number PIX (Continue)

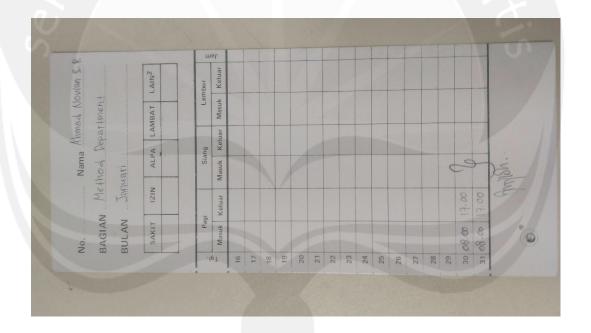
#### **APPENDIX**

# **Appendix 1. Method Department Business Process**

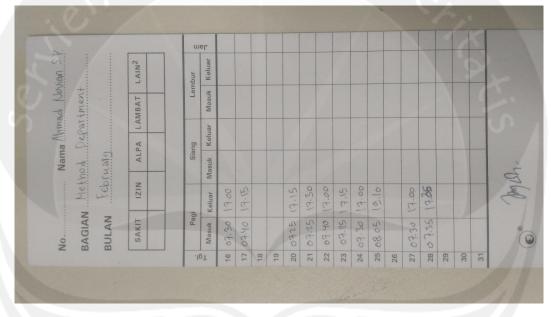
**NETWORK OF INTERACTION** Major interaction parties: (Internal e.g. colleagues, Sales & Marketing Dept., Unions & etc. External e.g. legal advisor, customers, distributors, Clients & etc.)

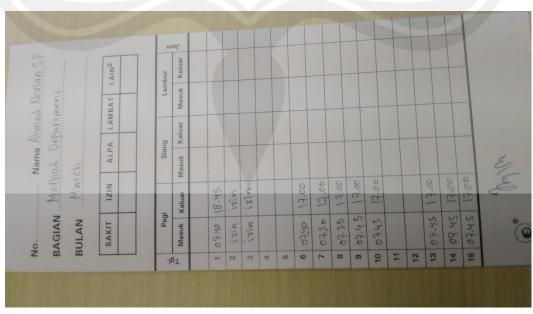


# **Appendix 2. Trainee Attendance Record**







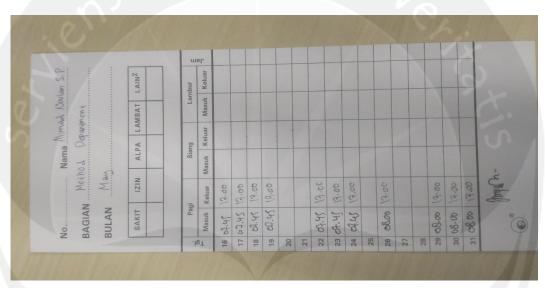
















Appendix 3. Working Activities Daily Log



# Program Studi Teknik Industri Universitas Atma Jaya Yogyakarta Lembar Bimbingan Pelaksanaan dan Penyusunan Laporan Kerja Praktek

Nama Mahasiswa	: Ahmad Novian Syah Putra
NPM	: 131407544
Perusahaan tempat KP	PT Schneider Electric
Tanggal pelaksanaan KP	: 30 Januari - 01 Juli 2017
Dosen Pembimbing	The Jin Air S.T., M.T., D. Eng.

No.	Tanggal	Agenda	Tanda Tangan Dosen Pembimbing
1.	16/12/2016	Penyerahan surat pembimbingan dan Konsultasi persiapan Kerja Praktek	Africa
2.		Laporan atau konsultasi tugas dari perusahaan	
5			
	1/8/2017	Laporan pertama setelah pelaksanaan Kerja Praktek dan konsultasi penyusunan laporan	14
	1/8/2017	Penyerahan draft laporan Kerja Praktek untuk pertama kali	14
	6/11/17	Pengesahan laporan Kerja Praktek	14
	~[it[[]		17

# PENILAIAN KERJA PRAKTEK OLEH PEMBIMBING/SUPERVISOR LAPANGAN

# KERJA PRAKTEK PROGRAM STUDI TEKNIK INDUSTRI, UNIVERSITAS ATMA JAYA YOGYAKARTA

Nama Mahasiswa	W.	Ahmad Novian Syah Putra
No. Mahasiswa	*	13 1407544
Perusahaan Tempat Kerja Praktek	11	PT. Schneider Electric Indonesia
Divisi/Departemen/Area Kerja		Method Department
Waktu Pelaksanaan	12. 27	30 January - ol July 2017

Mohon Bapak/Ibu pembimbing lapangan memberikan penilaian atas prestasi mahasiswa peserta kerja praktek sesuai dengan aspek penilaian di bawah ini. Nilai terendah adalah 1 dan nilai tertinggi adalah 10.

No.	Aspek Penilaian		Nilai (1 – 10)
1.	Kedisiplinan	3	10
2.	Motivasi kerja		10
3.	Tanggung jawab		10
4.	Kerjasama dengan rekan sekerja		9 0
5.	Sopan santun dan tata krama		10
6.	Daya tangkap dan pemahaman terhadap tugas yang diberikan		9
7.	Kemampuan melaksanakan dan menyelesaikan tugas		70
8.	Keterampilan dalam menggunakan peralatan kerja		10
9.	Perawatan terhadap peralatan kerja		10
10.	Perhatian terhadap keselamatan kerja		9

(Karang, 10-7)

Pembimbing/Supervisor Lapangan,



#### Catatan:

- Nilai pada setiap aspek dikategorikan dalam peringkat sangat baik (nilai nominal: 9–10), baik (7-8), cukup (5-6), kurang (3-4), dan sangat kurang (1-2).
- Pembimbing/Supervisor Lapangan dimohon mengisi blanko penilaian ini apabila mahasiswa yang bersangkutan telah menyelesaikan Laporan Kerja Praktek di Perusahaan.
- Mahasiswa yang tidak menyerahkan blanko nilai yang sudah terisi oleh pembimbing lapangan tidak akan menerima nilai akhir Mata Kuliah Kerja Praktek.