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**SERVICE MANAGEMENT INFORMATION SYSTEM  
ANALYSIS (SIMPEL) AT DPMPTSP USING COBIT 5  
(ANALISIS SISTEM INFORMASI MANAJEMEN  
PELAYANAN (SIMPEL) PADA DPMPTSP KOTA  
PEKANBARU MENGGUNAKAN COBIT 5**

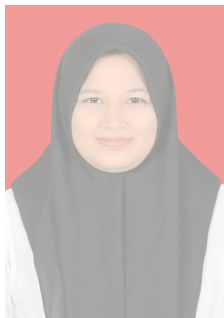
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Untuk Memperoleh Gelar Sarjana Teknik  
Pada Jurusan Teknik Informatika

Oleh

**DIAHTUL HADAWIYAH**

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UIN SUSKA RIAU

**FAKULTAS SAINS DAN TEKNOLOGI  
UNIVERSITAS ISLAM NEGERI SULTAN SYARIF KASIM RIAU  
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SERVICE MANAGEMENT INFORMATION SYSTEM ANALYSIS (SIMPEL) AT  
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PELAYANAN (SIMPEL) PADA DPMPTSP KOTA PEKANBARU MENGGUNAKAN  
COBIT 5

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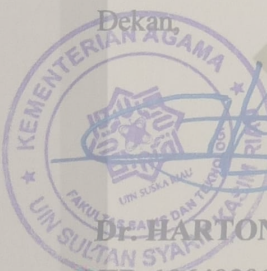
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Tugas akhir ini penulis persembahkan sebagai bentuk semangat, usaha, serta ungkapan cinta dan sayang kepada orang-orang terpenting dalam hidup penulis. Dengan ketulusan hati dan rasa terima kasih yang mendalam, tugas akhir ini penulis persembahkan kepada:

Mamaku tersayang, Andrian Ilham Syahroni, Bapak H.ismira, serta kakak dan abang ku tersayang, Mesya Andriani, Chayra Andriani, Razzan Ilham juga seluruh keluarga besar penulis yang telah memberikan dukungan moril, materil, serta doa dan restu, sehingga penulis dapat menempuh pendidikan hingga jenjang S1 di Jurusan Teknik Informatika, UIN Sultan Syarif Kasim Riau.

- Dosen pembimbing, Bapak Novriyanto, S.T., M.Sc., yang telah memberikan bimbingan, arahan, dan motivasi hingga tugas akhir ini dapat terselesaikan dengan baik.
- Seluruh dosen pengajar yang telah membimbing dan mendidik penulis dengan penuh kesabaran dan keikhlasan, sehingga ilmu yang diperoleh selama masa perkuliahan dapat menjadi bekal yang bermanfaat di masa depan.
- Teman-teman seperjuangan di Program Studi Teknik Informatika, UIN Sultan Syarif Kasim Riau, atas kebersamaan dan dukungan selama menempuh perjalanan akademik.

Semoga tugas akhir ini dapat memberikan manfaat bagi para pembaca.

Aamiin ya Rabbal 'Alamiin.

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## Service Management Information System Analysis (SIMPEL) At DPMPTSP Using COBIT 5

Diahtul Hadawiyah<sup>1</sup>, Novriyanto<sup>\*2</sup>, Teddie Darmizal<sup>3</sup>, Lola Oktavia<sup>4</sup>

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**ABSTRACT:** The Pekanbaru City Investment and One-Stop Integrated Services Office (DPMPTSP) is one of the parts of the government sector in Pekanbaru that handles matters related to investment, licensing and non-licensing services in an integrated manner. DPMPTSP has one of the services, namely the Service Management Information System (SIMPEL) for licensing and non-licensing services and is an important part of supporting the principles of good governance but does not yet have a benchmark that can be used as an evaluation to optimize services. This study aims to determine the level of capability of the Service Management Information System (SIMPEL) using COBIT 5 Deliver, Service, and Support (DSS) domains with 6 sub-domains, namely DSS01, DSS02, DSS03, DSS04, DSS05 and DSS06. This research obtained the results of the recapitulation of the capability level of the Service Management Information System (SIMPEL) at DPMPTSP, which is at level 4 (Predictable) which means that at this level the information system is well integrated and the service process is controlled and predictable.

**KEYWORDS:** COBIT 5, DSS, IT governance, e-government, SIMPEL

### INTRODUCTION

The development of Information Technology (IT) plays a very important role in various sectors today. In the government sector, the technological revolution has moved government officials to prepare changes that can help improve bureaucratic performance and improve services towards the realization of good governance. The use of information technology in the field of government is known as (Akhwan & Fitri, 2025) *electronic government (e-government)* or Electronic-Based Government System (PBE).

E-government can connect people's needs, businesses and other activities such as helping people reduce costs and waiting times to get services from the government. With the existence of E-government, the public can get information about services more easily. (Aulia & Nerisafitra, 2024; Rusdy Flamoni, 2023)

The Pekanbaru City Investment and One-Stop Integrated Services Office (DPMPTSP) is one of the parts of the government sector in Pekanbaru that handles matters related to investment, licensing and non-licensing services in an integrated manner. DPMPTSP has several types of online-based services, one of which is the Service Management Information System (SIMPEL) which is a digital solution made to support the smooth process of service to the community, especially in applying for permits. SIMPEL aims to simplify the service flow, speed up the process and provide easier and more transparent access for users. With this system, the public can submit various applications such as

business licenses and other administrative services online and centrally. In addition, the Pekanbaru City DPMPTSP can also monitor service performance effectively. (Capital and One-Stop Integrated Services of the City of Pekanbaru & Radiani, 2025) (Licensing Services at the Investment Office and One-Stop Integrated Services of Riau & Akhwan Province, 2025)

Maintaining service performance is the responsibility of government agencies engaged in services. Decreased service performance can be a sign of problems in IT so that it is necessary to measure the level of capability to find out the progress of the IT process that has been carried out and can more easily find parts that need to be improved or improved. SIMPEL in DPMPTSP as one of the service fields in government agencies is an important part of supporting the principles of good governance but does not yet have a benchmark that can be used as an evaluation to optimize services. Therefore, IT service level measurements are needed to find out if the system is running as standard, detect disruptions early and make timely repairs so that services are not disrupted. (Damayanti & Manuputty, 2019)

Various *frameworks* have been used for service performance measurement, one of which is COBIT 5. COBIT 5 is an IT governance and management framework for measuring the quality of public services. COBIT 5 produces comprehensive guidelines to align IT with government business strategies and meet the needs of the community so as to improve the efficiency and effectiveness of public services. (Petrus I.S. Lemu et al., 2024)



COBIT 5, Domain *Deliver, Service and Support* (DSS) is used as the focus of this research. This domain was chosen because it is directly related to the implementation of day-to-day IT services including service delivery, technical support and operations management. This system is used by the public financial management employees to access licensing services so the reliability and responsiveness of the service is very important. Through the DSS domain, DPMPTSP can evaluate the extent to which IT services are successfully supporting user needs, both in terms of system availability, service speed and quality of support for incidents and technical problems.

## RESEARCH METHODS

The series of processes from this research can be seen in the following image.

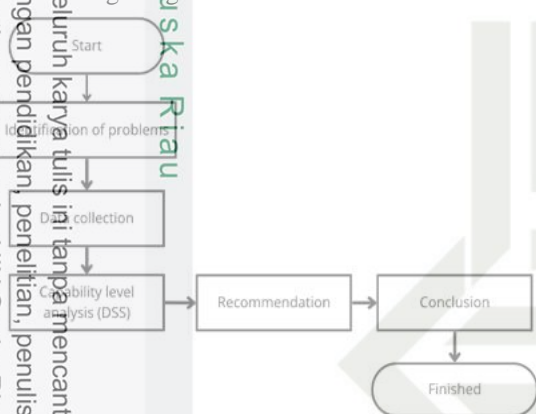


Fig. I. Research Series

Based on the series of studies in figure 1, it can be described in more detail as follows:

### Problem Identification

This stage marks the beginning of the research process to find and formulate the main problems to be researched. Based on the previous background description, it can be identified that there is no measurement of the level of capability to determine the extent to which the Service Management Information System (SIMPEL) has run optimally and supports an effective service process.

### Data Collection

In this stage, various research activities are carried out, including:

#### 1. Observation

Observation is carried out by collecting information directly to the DPMPTSP in order to understand the real conditions related to how the Service Management Information System (SIMPEL) works, who are the users and the obstacles or existing needs.

#### 2. Questionnaire

The preparation of questionnaire questions is adjusted to the activities contained in the Deliver, Service and Support (DSS) domain consisting of 6 subdomains. After the questionnaire was compiled, the relevant respondents were determined using the

RACI charts approach. This method is used to facilitate the distribution of questionnaires and identify the roles of each party, starting from those who carry out their duties (Responsible), the main accountant (Accountable), the advisor (Consulted) and the recipient of information (Informed). (Nurhuda et al., 2021)

### 3. Interview

The interview process was carried out with the parties involved in the management of the system, namely administrators or managers of SIMPEL, service counter officers, technical teams and helpdesk teams.

## C. DSS Capability Level Analysis

All data that have been obtained from DPMPTSP related to the Service Management Information System (SIMPEL) are analyzed using the likert measurement scale. This scale was used to analyze respondents' answers from questionnaires created based on the COBIT 5 framework. All questions contained in the questionnaire are made based on the Deliver, Service, and Support (DSS) domain guidelines. Details of the likert scale values are given in the following table (Amalia et al., 2020) .

Tables I. Likert scale

Answer	Value
Strongly disagree	1
Disagree	2
Nervous	3
Agree	4
Strongly agree	5

Furthermore, the following formula is used to calculate the overall questionnaire answers that have been carried out

$$C = \frac{JK}{JK} \times 100\%$$

Information:

C = Questionnaire answer recapitulation

JK = Number of questionnaire answers

JR = Number of respondents

To calculate the value and capability level, the following formula is used:

$$Nk = \frac{(Nr \times L0) + (Nr \times L1) + (Nr \times L2) + (Nr \times L3) + (Nr \times L4) + (Nr \times L5)}{100}$$

Information:

Nk = Capability value

Nr = Recapitulation value

L = Level level (0-5)

After completing the calculation, a *gap* or difference will be found between the level of capability obtained and the level of capability that is expected or desired to be achieved. So that later it can be analyzed to what extent the (Kurniawan et al., 2023) current Service Management



Information System (SIMPEL) is in accordance with the conditions expected by the DPMPTSP.

#### D. Recommendations

Recommendations are obtained based on *existing gap analysis*. Recommendations are made so that weaknesses or shortcomings contained in the Service Management Information System (SIMPEL) can be identified and minimized to increase the current level of capability to be in line with the level of capability that DPMPTSP wants to achieve.

Previous Research:

The previous capability level analysis has been carried out by Alhadyo Priandika using COBIT 5 DSS domain. In the study, it was found that the problem was that the administrative process of document archiving was still carried out manually so that there was a forgetfulness in recording data and compiling documents which resulted in data accumulation and loss of documents. This research obtained an overall result of 4.8 which means that it is at level 3 (*Optimized*) information technology has been used and is used as an evaluation to improve performance with the recommendation that the Bandar Lampung State Court must improve services to *stakeholders* and convey the results of the measurement so that it is handled immediately so that document archiving is protected safely and is no longer done manually. (Thyo Priandika et al., 2020)

The research was then conducted by M Rizky Astari at the Habibul Hasanah Islamic Boarding School (PPSH) who evaluated the assessment of the PPSH information system using COBIT 5 DSS domain. The evaluation obtained the results of the capability level DSS01, DSS02, DSS04, DSS05, DSS06 at level 1 and DSS03 at level 2. Therefore, recommendations are given to PPSH to make guidelines in managing documents and carrying out tasks as well as monitoring every action related to COBIT 5 in order to achieve the desired targets. (M Rizky Astari & Bambang Sugianto, 2023)

The next research by Daffa Iqbal who conducted an information technology audit using COBIT 5 DSS domain at Stikubank University Semarang aimed to ensure that smart campus technology is managed properly as a contribution to achieving university goals. After analysis and calculation of the process, the capability level of the DSS domain as a whole is at level 2. At this level, the IT governance that occurs in the smart campus system of Stikubank University as a whole has been managed well, but some aspects still need improvement, such as the need for the development of Standard Operating Procedures (SOP) that are in line with the COBIT 5 framework. (Agselmora et al., 2022)

The next research was conducted by Novian Steven on, Analysis of COBIT 5-Based Information Systems on LTUKSW. The research involved 3 resource persons

using the same domain as the previous research, namely DSS with all its sub-domains, namely 6 sub-domains. Through this analysis, the results of the measurement of the capability level are at level 1 (*Performed Process*) which means that the process has been implemented well and the goal has been achieved but is still far from the expected level of 5. So that to be able to achieve the desired level, it is necessary to make several improvements such as doing regular documentation, reviewing, recording and evaluating problems in the continuity of business processes. (Steven et al., 2021)

### III. RESULT AND DISCUSSION

#### A. Domain Deliver, Service, and Support (DSS)

Deliver, Service, and Support (DSS) is one of the five domains in COBIT 5 that focuses on IT service management and support. In *E-Government*, DSS plays an important role in supporting quality IT services to improve public services. DSS ensures that *e-government services* can run stably and provide a good experience to users (Erizal et al., 2021; Hamidah et al., 2024).

The following conditions are currently occurring in the Service Management Information System (SIMPEL) based on the DSS sub-domain, namely:

1. DSS01 Manage Operation  
The implementation of service SOPs has not been carried out optimally and training for employees has not been carried out related to rescue in emergencies. In addition, the recording of events and the identification of the level of information to be recorded based on risk and performance considerations have not been fully carried out.
2. DSS02 Manage Service Request and Incidents  
Verification of service requests and service status tracking are still not consistent and closures of service incident requests that have been successfully resolved have not been fully implemented.
3. DSS03 Manage Problems  
Problem groupings have not been fully categorised and reports to communicate progress in problem resolution have not been done regularly.
4. DSS04 Manage Continuity  
Analysis of business impact including reviewing current business plans, continuities, operational objectives and strategies is still not routinely conducted.
5. DSS05 Manage Security Services  
Data security has not been done more wisely and robustly to ensure the security and confidentiality of users are maintained.
6. DSS06 Manage Business Process Controls  
Data classification, use, and security policies and procedures have not been fully implemented to protect information assets and preserve evidence of corrective actions as future evaluation reports.





### 3. RACI Chart Mapping

The RACI Chart is a method for clearly and effectively describing responsibility and involvement in a process (Asnal & Citra, 2020). The RACI Chart is used to depict the capability level questionnaire to be given. The respondents involved were divided into 4 roles according to the provision of the RACI chart. The respondents involved in this study amounted to 5 respondents including 1 head of licensing, 1 IT staff, 1 service counter officer, 2 sub-coordinators of application and network management. For more details, you can see the table below.

### 3.1 RACI Mapping

Role	Position
Responsible	IT staff, Service counter officer
Accountable	Sub-coordinator of application and network management
Consulted	Sub-coordinator of application and network management
Informed	Head of licensing

### 3.2 Capability Level Calculation Results

To obtain a more readable questionnaire score, the scale is rounded first as listed in the following table:

### 3.3 Scaling rounding

Capability level	Value Interval
0 Non-existent	0 – 0,49
1 Performed	0,50 – 1,49
2 Managed	1,50 – 2,49
3 Established	2,50 – 3,49
4 Predictable	3,50 – 4,49
5 Optimized	4,50 – 5,00

The description of the table above is Level 0 (Non-existent), meaning that the process has not been carried out thoroughly or is not in accordance with the set objectives. Level 1 (Performed), the process has started but the implementation is not yet orderly and inconsistent. Level 2 (Managed), steps have been taken to manage processes more effectively and consistently. Level 3 (Established), the process described earlier is now applied to achieve the desired outcome. Level 4 (Predictable), the agency has achieved a level of consistency in process results and continues to make improvements to improve quality. Level 5 (Optimized), the agency achieves the best level of performance by continuously improving processes through learning and innovation so as to achieve continuous operational excellence. (July et al., 2021)

From the results of the calculation of the value analysis of the capability value of the Service Management Information System (SIMPEL) in DPMPTSP on the DSS domain process which has 6 sub-domains and a total of 38 processes, the

results of the capitulation value of the capability level are obtained as in the following table:

**Table IV. Value of DSS capabilities**

Domain	Index capability	Level	Model level capabilities
DSS 01	3,81	4	Predictable
DSS 02	3,55	4	Predictable
DSS 03	3,60	4	Predictable
DSS 04	3,65	4	Predictable
DSS 05	3,74	4	Predictable
DSS 06	3,67	4	Predictable
Average	3,67	4	Predictable

Based on Table IV, it can be seen that the results of each process measured with a capability model using COBIT 5 are at level 4, which means that the implementation of the Service Management Information System (SIMPEL) in DPMPTSP has run effectively and in accordance with good governance standards.

### D. Gap Analysis

Gap analysis is carried out after knowing the current level of maturity (as is) and the expected level of maturity (to be) to identify activities or improvements that need to be made by the DPMPTSP to achieve the expected level. To find out how big the gap is between the capability level target and the capability level that has been achieved by the Service Management Information System (SIMPEL) in DPMPTSP, you can see the following table:

**Table V. Gap Analysis**

Process	Capability Level		GAP
	As is	To be	
DSS 01	4	5	1
DSS 02	4	5	1
DSS 03	4	5	1
DSS 04	4	5	1
DSS 05	4	5	1
DSS 06	4	5	1

Based on the results in the previous table, the average current capability value (as is) is 3.67 with a capability level of 4. Meanwhile, the condition to be achieved (to be) is level 5, so that the GAP value for the entire DSS process from DSS01 to DSS06 is 1 which means that the performance of services in the Service Management Information System (SIMPEL) at DPMPTSP must make continuous improvement efforts so that known errors do not occur again and are able to reach the desired level.

### E. Recommendations

To achieve the capability level process at level 5, which is *an optimized process*, several recommendations are given as follows:



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1. DSS01- Manage Operations  
Implement service SOP more clearly and in detail so that services can be appropriate and not become obstacles in resolving user requests and provide personnel training to employees on rescue in case of emergency in the event of a fire or similar incident.

2. DSS02- Manage Service Request and Incident  
Verify service requests and track service status so that users can get clear information about the status of their requests and complaints and close service incident requests after the incident is successfully resolved.

3. DSS03- Manage Problem  
Grouping issues to make it easier to handle issues according to their categories and creating reports to communicate progress in problem solving.

4. DSS04- Manage Continuity  
Conduct an analysis of business impact to evaluate the impact over time and the consequences that may occur from such disruptions and regularly review current business plans, continuities, operational objectives and strategies.

5. DSS05- Manage Security Services  
Improve data security to ensure user security and confidentiality, assign access rights to sensitive documents and conduct regular reconciliation.

6. DSS06- Manage Business Process Controls  
Implement data classification, use, and security policies and procedures to protect information assets and preserve evidence of corrective actions as future evaluation reports.

**CONCLUSIONS**  
After analyzing and calculating the DSS domain capability level process in the Service Management Information System (SIMPEL) in DPMPTSP using COBIT 5 with 6 subdomains, namely Manage Operations (DSS01), Manage service request and incidents (DSS02), Manage problem (DSS03), Manage continuity (DSS04), Manage security service (DSS05) and Manage business process control (DSS06), the total number of processes is 38. A total of 141 questions by interviewing 5 respondents, the results of the recapitulation of the level of capability of the Service Management Information System (SIMPEL) at DPMPTSP are obtained, which was at level 4 (Predictable). At this level, the information system is well integrated and the service process is controlled and predictable. It was found that a gap of 1 to be able to reach level 5 (Optimizing) so that DPMPTSP must continue to improve and optimize service effectiveness by increasing the automation of service processes to reduce response time so that the goal of improving performance is truly achieved and provides greater benefits to the community.





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## Letter of Acceptance

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