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Risk Management Domain Application Plan Electronic Based Governance System (SPBE) Case Study: Tangerang Government Communications and Informatics Service

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KEYWORDS

Risk Management, Electronic Based Governance System (SPBE), Tangerang Government Communications and Informatics Service

ABSTRACT

Various applications of SPBE have been produced by the Central and Regional Authorities and have contributed to the efficiency and effectiveness of government maintenance. Nevertheless, the results of the SPBE development show a relatively low maturity rate and a high gap between the Central Authority and the Regional Government. Based on the results of the 2018 SPBE evaluation of 616 Central and Regional Government Instances, the National SPBE Index reached a value of 1.98 with a sufficient predicate of the target SPBE index of 2.6 out of 5 levels with a good prediction. Reviewed from the access of Central and Regional Authorities, the average Central Authorities SPBE index was 2.6 with a good predicate, while the average Regional Government SPBE Index was 1.87 with a sufficient Predicate. Reviewed from the target access spread, 13.3% of Central and Regional Authorities have reached or exceeded the target SPBE 2.6 index, while 86.7% have not yet reached the SPBE 2.0 index target. This shows that there are problems in the development of the SPBE nationally. On the other hand, the development of ICT 4.0 trends is a key external factor that can drive the realization of integrated SPBE implementation and improved quality of SPBE services that make it easier for users in accessing government services. The vision is a benchmark in implementing the integrated implementation of SPBE in the Central and Regional Authorities to produce integrative, dynamic, transparent, and innovative government bureaucracy, as well as improving the quality of integrated, effective, responsive, and adaptive public services.

1. Introduction

Various applications of SPBE have been produced by the Central and Regional Authorities and have contributed to the efficiency and effectiveness of government

maintenance. Nevertheless, the results of the SPBE development show a relatively low maturity rate and a high gap between the Central Authority and the Regional Government. Based on the results of the 2018 SPBE evaluation of 616 Central and Regional Government Instances, the National SPBE Index reached a value of 1.98 with a sufficient predicate of the target SPBE index of 2.6 out of 5 levels with a good prediction. Reviewed from the access of Central and Regional Authorities, the average Central Authorities SPBE index was 2.6 with a good predicate, while the average Regional Government SPBE Index was 1.87 with a sufficient Predicate. Reviewed from the target access spread, 13.3% of Central and Regional Authorities have reached or exceeded the target SPBE 2.6 index, while 86.7% have not yet reached the SPBE 2.0 index target. This shows that there are problems in the development of the SPBE nationally (Andriyanti Asianto, Nenden Siti Fatonah, Gerry Firmansyah, 2023).

On the other hand, the development of ICT 4.0 trends is a key external factor that can drive the realization of integrated SPBE implementation and improved quality of SPBE services that make it easier for users to access government services. Some of the emerging ICT 4.0 trends include: first, mobile internet technology can be utilized for ease of access to government services through user personal practices that move freely without time and location limitations; second, cloud computing technology provides high efficiency and efficiency for ICT integration; third, Internet of Things technology is able to provide services that are adaptive and responsive to the needs of customizing the desired services of users as well as expanding the availability of government services channels; fourth, big data analytics technology is capable of providing decision-making and policy-making support for governments; and fifth, artificial intelligence technology can help governments in reducing administrative burdens such as translation of documents in the form of writing/voice and help the public in solving complex issues such as health and finance.

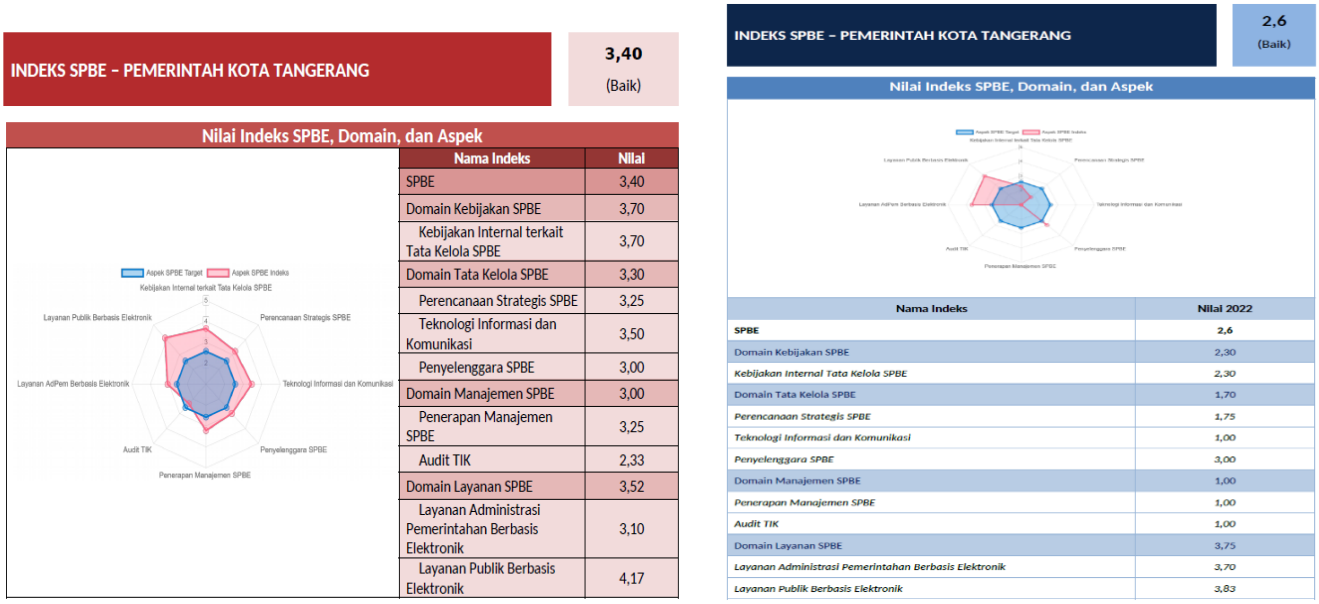
There are problems with the implementation of SPBE and the trend of the ICT 4.0 revolution generates a number of risks that can affect the achievement of the SPBE objectives. The problem of implementing SPBE can contribute to negative risks that can hinder the achievement of SPBE objectives. While the trend of ICT 4.0 revolution can contribute to positive risks that can increase the chances of success in achieving SPBE goals. Therefore, the various risks that arise in the implementation of SPBE must be well managed by the Central and Regional Authorities as the organizers of the SPBE. In order to guarantee the continuity of the implementation of SPBE, SPBE risk management is required by the Central and Regional Authorities to the objectives of the SPBE as mandated in Presidential Regulation No. 95 of 2018 on Electronic Based Governance Systems (Sitanggang & Sitanggang, 2022).

The government recognizes the importance of the SPBE's role in supporting all development sectors. Efforts to encourage the implementation of SPBE have been made by the government by issuing sectoral legislation regulating the need for information system maintenance or SPBE. So far, ministries, agencies, and local governments have implemented the SPBE on their own in accordance with their capacity, and have achieved a level of progress that varies widely nationally. In order to build a legal synergy of implementation of the SPBE between ministries, agencies, and local governments, a National SPBE Master Plan is needed to serve as a guideline for the Central and Regional Authorities to an integrated SPBE. The National SPBE Master Plan is drawn up taking into account the policy direction, strategy, and initiatives in the sphere of SPBE governance, SPBE services, ICT, and SDM to the

strategic goals of the SPBE in 2018 - 2025 and the objectives of the development of the state apparatus as set out in the 2005 - 2025 National RPJP and the Grand Design of Bureaucratic Reform 2010 – 2025.

The vision is a benchmark in implementing the integrated implementation of SPBE in the Central and Regional Authorities to produce integrative, dynamic, transparent, and innovative government bureaucracy, as well as improving the quality of integrated, effective, responsive, and adaptive public services. President's Rules No. 95 Year 2018 (Perpres, 2018).

The Government of Tangerang in the promotion of the SPBE index in 2020 has achieved SPBE 3.4 and in 2021 has acquired 2.60



INDEKS SPBE – PEMERINTAH KOTA TANGERANG	3,40 (Baik)

Nilai Indeks SPBE, Domain, dan Aspek

Nama Indeks	Nilai
SPBE	3,40
Domain Kebijakan SPBE	3,70
Kebijakan Internal terkait Tata Kelola SPBE	3,70
Domain Tata Kelola SPBE	3,30
Perencanaan Strategis SPBE	3,25
Teknologi Informasi dan Komunikasi	3,50
Penyelenggara SPBE	3,00
Domain Manajemen SPBE	3,00
Penerapan Manajemen SPBE	3,25
Audit TIK	2,33
Domain Layanan SPBE	3,52
Layanan Administrasi Pemerintahan Berbasis Elektronik	3,10
Layanan Publik Berbasis Elektronik	4,17

INDEKS SPBE – PEMERINTAH KOTA TANGERANG	2,6 (Baik)

Nilai Indeks SPBE, Domain, dan Aspek

Nama Indeks	Nilai 2022
SPBE	2,6
Domain Kebijakan SPBE	2,30
Kebijakan Internal Tata Kelola SPBE	2,30
Domain Tata Kelola SPBE	1,70
Perencanaan Strategis SPBE	1,75
Teknologi Informasi dan Komunikasi	1,00
Penyelenggara SPBE	3,00
Domain Manajemen SPBE	1,00
Penerapan Manajemen SPBE	1,00
Audit TIK	1,00
Domain Layanan SPBE	3,75
Layanan Administrasi Pemerintahan Berbasis Elektronik	3,70
Layanan Publik Berbasis Elektronik	3,83

Figure 1 – Index of SPBE in Government of Tangerang

Based on the explanation of the problem, it is necessary to evaluate the application domain of Risk Management Electronic Based Government System (SPBE) of the Communications and Informatics Service of the Government of Tangerang. The aim of this study is to recommend the proposal to add existing Risk Management Indicators on NIST 800-30 to the existing risk management regulations of the Ministry of State Appliances Regulations No. 5 Year 2020 on risk management of SPBE (Dipraja, Fuadi, & Rachman, 2021).

2. Materials and Methods

Cobit 5

The use of information technology or IT and communications continues to grow rapidly. As a result, Cobit 5 was created which is vital for government institutions to improve efficiency and efficiency in their operational activities. Therefore, it requires proper IT management to provide more benefits to the company. COBIT 5 contains a set of tools that support and enable managers to bridge the gap between controlled requirements, technical

issues, and good practice. COBIT is an information technology management framework created by the Information System Audit and Control Association and the IT Governance Institute. In CobiT there are 5 domains namely: Evaluate, Direct and Monitor, Align, Plan and Organize, Build, Acquire and Implement, Delivery, Service and Support, Monitoring, Evaluate and Assess. This research will focus on the Align Plan and Organize domain

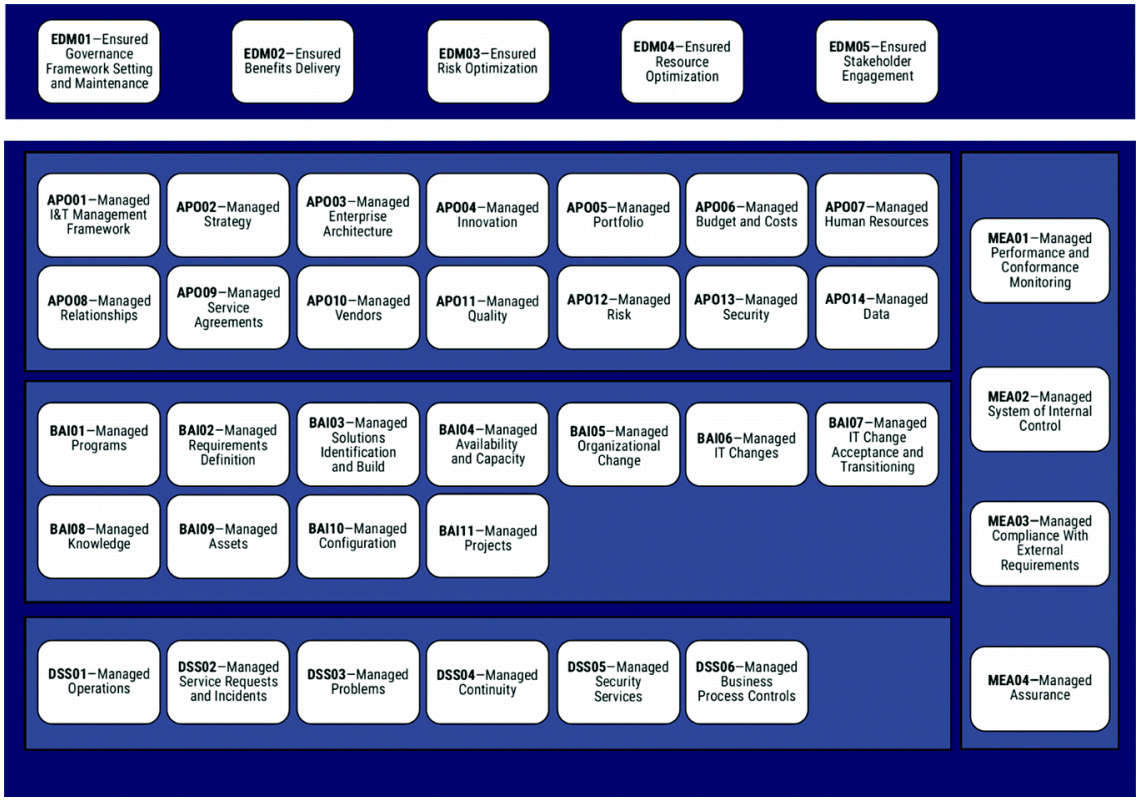


Figure 2 – Align Plan and Organize domain

NIST 800-30 framework

NIST 800-30 framework, the methods carried out in the Risk Management Analysis Research on Electronic Based Governance Systems with the nist 800-30 Framework in the municipal government, begin with the study of literature by looking for the theoretical foundations of various journals or books that have similarities with related research, the characterization of the information system used for the research object, the identification of threats that are likely to occur on the related object, identifying the gaps to be passed by the threat, the identifying of controls that will ultimately prevent the threats from occurring, the determination of the probability to see whether they could occur, the impact analysis to find what effects such threats might have if they occur, risk determination to determine which threats will eventually be called with risk, control recommendations aimed at giving what objects should be done to avoid the risk, and the preparation of reports for research documentation. Data search with interviews, observations, and data analysis qualitatively (Sulistyowati, Handayani, & Suryanto, 2020).

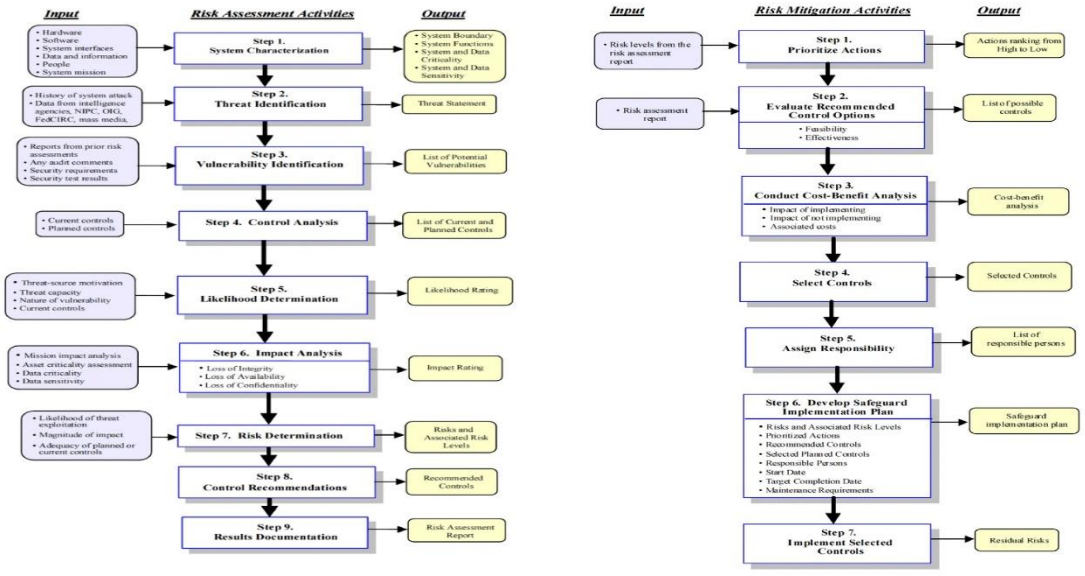


Figure 3 - NIST 800-300

SNI ISO

Generally speaking, ISO 31000:2018 simplifies the 2009 version. It was immediately visible, among other things, from changing the name from «principles and guidelines» to just «guidelines», as well as from the number of pages shrinking from 24 to 16. The diagrams that describe the relationship between principles, frameworks, and process management processes have changed. In addition, the number of «principles» in the old version contains 11 principles (Kurniati, Nugroho, & Rizal, 2020). It can be said that the 2009 version of the ISO has some closed frameworks. In the 2009 version, principles, frameworks, and processes were described as a sequential set of elements, whereas in the 2018 version these three parts were depicted as interrelated open systems.(Sutejo & Firmansyah, 2022)

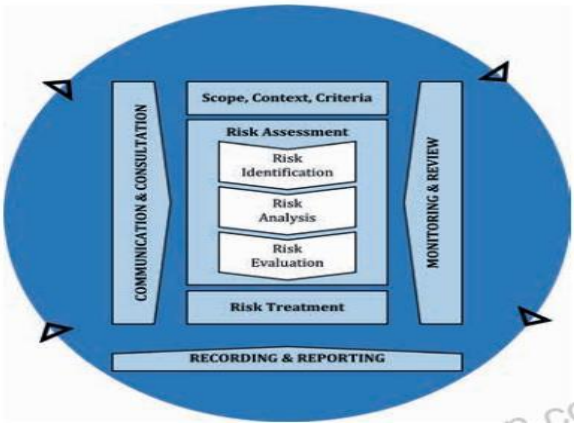


Figure 4 – Principles and Guidelines

Permenpan No 5 of 2020

SPBE Risk Management is a systematic approach that covers processes, measurements, structures, and cultures to determine best action related to SPBE risk (Perment, 2020). The SPBE Risk Management Framework describes the basic components used as the basis for the implementation of SPBE risk management in the Central and Regional Authorities. In order for SPBE Risk Management to be properly implemented, the Central and Regional Authorities may directly adopt or modify this SPBE risk management framework in accordance with the internal and external contexts in their respective environments (Hadi, Gumilang, & Nugraha, 2021).

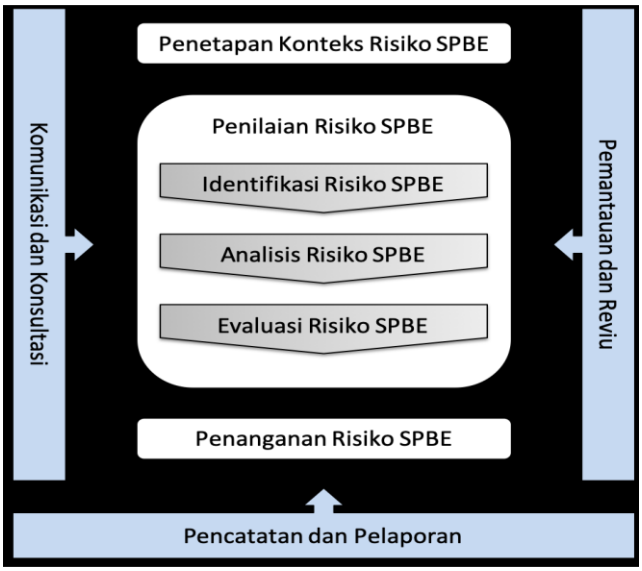


Figure 5. Permenpan RB no 5 of 2020

SPBE Risk Management is a systematic approach that covers processes, measurements, structures, and cultures to determine best action related to SPBE risk. The SPBE Risk Management Framework describes the basic components used as the basis for the implementation of SPBE risk management in the Central and Regional Authorities. In order for SPBE Risk Management to be properly implemented, the Central and Regional Authorities may directly adopt or modify this SPBE risk management framework in accordance with the internal and external contexts in their respective environments (Aywandari, Gumilang, & Nugraha, 2021).

Table 1. The Gap Research

No	Method	Total	Gap Average
1.	Identification of Risk Management Processes Using	27	Risk management implementation has been

	NIST 800-30		carried out in accordance with the target
2.	Identification of Risk Management Processes Using Cobit 5	18	Risk management implementation has been carried out in accordance with the target
3.	Identification of risk management processes, risk management analysis using ISO SNI	5	Risk management implementation has been carried out in accordance with the target

This research method is carried out in several steps: type of research, case selection, data collection techniques, data validity checking techniques, NIST 800-30 methods, and documentation. Ministry of State Apparatus Regulations on Bureaucratic Reforms No. 5 of 2020 are the SPBE Risk Management Guidelines used to provide guidance to Central and Regional Governments in the formulation and implementation of SPBE risk management, consisting of indicators of risk determination, risk purchase, risk identification, Risk analysis, risk assessment, risk management (Hasprasi, Santoso, & Falahah, 2023).

3. Results and Discussions

NIST methods 800-30 This stage is used to analyze the risk management process of the SPBE Government of Tangerang City. This phase is also used to identify any impact that affects the implementation of the risk management SPBE Government of Tangerang City. NIST 800-30 has three stages of assessment: risk assessment, risk warning, and risk evaluation.table. Each table and graph must be numbered and names and placed as close together as possible with paragraphs where the tables and graphs are discussed. Interpretation of analysis results to Ministerial regulations empowering state apparatus to reform bureaucracy No. 5 Year 2020 The SPBE Risk Management Guidelines are used to provide guidance to Central and Regional Authorities in the formulation and implementation of SPBE risk management (Pratama, Gumilang, & Mulyana, 2021). SPBE Risk Assessment Indicators, SPBE Risks Purchasing, Spbe Risk Identification, SPbe Risks Analysis, SPBe Risk Evaluation, Risk Management Data collection phase.
The stage of data collection is carried out by performing information excavation from the parties involved in the information system.:

a. Observation

This observation was made to observe the situation according to the topic to be discussed. The observation was conducted by visiting the Office of the Government of Tangerang Municipal Information Services to see and observe the information system technology used. In addition, observations were conducted to know the risks experienced and how the processes run by the SPBE risk management party in support of the running business process.

b. Interview

This stage of the interview is done with the in-depth interview technique. The interview was conducted at the Tangerang Municipal Government Communications Service. Interviews are conducted to find out the problems and risks that have ever been experienced, informants in the interview.

4. Conclusion

NIST 800-30: It was developed by the National Institute of Standards and Technology in the United States. Focus on risk management in the context of information security and information technology systems. Provides guidance for conducting risk assessments, including identifying threats, vulnerabilities, and potential impacts on information and data systems. Adapted for government institutions that prioritize information security and need to manage risks associated with IT infrastructure and sensitive data. Ministerial Regulation on Empowerment of State Apparatus of Bureaucratic Reform No. 5 Year 2020: The SPBE risk management standard applies to all types of risks faced by governments, not limited to information security. Provides principles, frameworks, and guidelines for managing risk at all levels in government. Encourage a systematic and proactive approach to risk management and emphasize the importance of a risk culture and communication. While NIST 800-30 is specifically focused on information security risk management, the Ministerial Regulation on Empowerment of State Apparatus Bureaucratic Reform No. 5 Year 2020 is the standard of risk management of the type of risk faced by a government institution. The proposal for RB No. 5 2020 is more general and flexible, so it is suitable for governance in various sectors and work units.

Both frameworks can be valuable tools for institutions to manage risk effectively, and the choice between them depends on the needs, objectives, and regulatory requirements of government institutions. Some government institutions may even choose to use both frameworks simultaneously to address various aspects of risk management comprehensively. Always make sure that you use the latest version of such a framework and that it is consistent with your government institution's risk management objectives and approaches.

In 2020 there is a standard or special risk management framework issued by the government called Ministerial Regulation on Empowerment of State Apparatus Bureaucratic Reform No. 5 Year 2020, which can be compared to NIST 800-30 for its application to government institutions. Let's compare the NIST 800-30 and the Ministerial Regulations on Empowerment of State Apparatus by Bureaucratic Reform No. 5 of 2020 in the context of risk management for the government.

Finally, the researchers recommended adding four indicators to the NIST 800-30: Threat Identification, Prioritize action, Conduct Cost Benefit Analysis, and Select Control. So from the study the indicators suggested are as follows: SPBE Risk Context Determination, Threat Identification, Risk Assessment, Risks Identifications, Riska Analysis, Prioritize action, Riske Evaluation, Conduct Cost Benefit Analysis and Select Control.

Table 1 comparison

ID	INDICATOR	INFORMATION
E1	SPBE Risk Context Determination	
E2	Threat Identification	Recommendation
E3	Risk Assessment	
E4	Risk Identification	
E5	Risk Analysis	
E6	Prioritize action	Recommendation
E7	Evaluasi Risiko	
E8	Conduct Cost Benefit Analysis	Recommendation
E9	Select Control	Recommendation
E10	Risk Handling	

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