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Recommendations for designing information security framework in government procurement of goods/services certification systems based on ISO 27001:2022

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Abstract

Certification Government Procurement of Goods/Services has applied since 2008 and switched to certification-based computers in 2015. However, technology information has raised problems with the security of necessary information fixed, like illegal access and practice jockeying through access remotely against application exam-based computers. To overcome the challenge, a framework Works security comprehensive information is required. In a study, the researcher compares System Certification Quality Management with Standard ISO 27001:2022 and observes Suite implementation certification procurement to develop a framework special can implement in system certification. Analysis results show that LKPP requires framework Work security information on the system certification procurement goods/services government based on the ISO 27001: 2022 standard. The proposed framework aims to facilitate application Certification Procurement by LKPP as institution-maker regulation and implementation system certification procurement.

Keywords: Certification Procurement, LKPP, Security Information, ISO 27001:2022, Framework Work

1. Introduction

One role of Government Procurement of Goods/Services (PBJ) is as a mover, primarily in sector business local and as a stimulus for creating new fieldwork. Through procurement, the rate of unemployment in Indonesia can scale down. Government can utilize PBJ to strengthen the domestic industry and increase the quality of products and services locally (Hanim et al., 2021). In addition, procurement also has a significant contribution to the absorption state budget. In 2023, state revenue through the State Budget will reach IDR 2,463 trillion (Perpres No 120 Tahun 2021). Details budget IDR 1,020.5 trillion has been announced in General Plan for Government Procurement of Goods/Services (SiRUP) for Year Budget 2023 (LKPP, 2023).

A massive amount of funds makes procurement, including vulnerable areas, corrupt. Several factor reason height level corruption in the PBJ process include framework weak legal and institutional, lack of the capacity of the government to manage the procurement of goods and services, low level of obedience to existing regulations, as well a lack of supervision and enforcement of effective law (Amirudin, 2012). Besides that, the government's lack of ability in detail needs, specifically in field technology high, to support the potency of existing corruption (Indrawan et al., 2020).

To realize ideal conditions and awaken credibility in PBJ, needed Human Resources (HR) with integrity. Source Power man in the PBJ field is a priority in prevention programs corruption Amirudin (2012) because this HR will become bone back prominent in a credible, dignified, and free PBJ process from corruption. To measure HR competence PBJ, LKPP implements Exam PBJ HR Certification. Certification this has been held since 2008. Examination process certification This Then developed become certification-based electronics in 2015. Certification PBJ's HR held as part of an effort to measure competence and ability to

source Power man in the field (Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah, 2022). Exam PBJ certification is electronic and available in two mechanisms: offline and online. Implementation exam offline held at the LKPP office and in the regions according to a specified schedule, with support from the Training Institute Procurement of Goods/Services (LPPBJ), which provides means of infrastructure training and exams for PBJ certification throughout Indonesia. Temporarily, that is, the execution exam online allows participant exams for no need to come to the LKPP office. We can do question exams from each participant's area online.

On the other hand, implementation exam certification PBJ based computer this open potency exists crime cyber or Cybercrime. Crime cyber or Cybercrime appears because activity exists negatively from development applications on the internet Rahmawati (2017) dan Abidin (2017). Potency risk threats on Confidentiality, Integrity, and Availability (CIA) also exist in the implementation process exam certification in a manner electronics. This is because exam certification in a manner electronic Utilize the internet media in sending and receiving questions from the server and answers submitted by participants in the exam. Potency threats in context exams can come from various aspects, one of them being through so-called practice jockey exams. A *test jockey* Alone can be defined as someone who does an exam in someone else's name to obtain financial or non-financial rewards (Safaatun et al., 2020). Test jockey can endanger integrity and security from something system evaluation or testing because it can influence the results to end from testing.

Study this focus on the design development framework security information on the system BJP certification. The proposed framework in the study this based on the System Quality Management (QMS) Certification and ISO 27001:2022. Several exciting studies have been done about the development framework Work security information based on ISO 27001. Research conducted by Hsu et al. shows how the impact of certification ISO 27001 onis performance company (Hsu et al., 2016). Mohammed & Jassim (2022) did study related design models for protecting documents based on ISO 27001:2013. In research, ISO 27001:2013 combined with several standard other international, namely ISO 10013 (Mohammed & Jassim, 2022). While Sugianto et al (2020) focus on the development framework of Work security information in matter systems, PBJ spread electronically based on ISO 27001.

2. Methods

This study uses information literature related to application certification procurement goods/services government in Indonesia, QMS Certification, security information, and ISO 27001:2022. Source studies originate from policies, standards, journals, books, and results studies before. The researcher compares System Certification Quality Management with Standard ISO 27001:2022 and does observations related to Suite implementation certification procurement, then looks for the gap between application certification procurement goods/services with ISO standard 27001:2022. All information the used as a base for designing framework security information in certification procurement goods/services government.

3. Research Result

Researcher analyze QMS Certification documents and conduct observation at the Directorate Certification LKPP profession in implementation BJP certification. Researcher Then classify every criteria and controls to develop framework proposed work.

Analysis of QMS Certification and ISO 27001:2022

Researcher do analysis against QMS Certification and compare them with controls that exist in ISO 27001:2022 to find out control whichever one already is contained in the Certification QMS. Analysis results shown in Table 1.

Table 1

Clauses in ISO 27001:2022

Quality Standards	Clauses / Controls Related
SM 1	A5.2, A5.3, A5.4, A6.1, A6.2, A6.3, A7.11, A8.1, A8.3
BC 2	A6.6
BC 3	A6.4
BC 4	-
SM 5	-

The researcher maps every criterion in QMS Certification and compares them with control in ISO 27001:2022. Based on mapping and comparison, this, by general Still Lots regulation on QMS Certification, has not related directly with control ISO 27001:2022, especially on SM 4 and SM 5. This is due to SM 4 being set in a specific provision general about authorized agency issue and sign certificate PBJ competence, while SM 5 regulates LPPBJ accreditation. Details clause/control related to ISO 27001:2022 in QMS Certification are shown in Table 2.

Table 2

Clauses/Controls Related With ISO 27001:2022

Quality Standards	Regulation	Name of Clause / Control
SM 1	A5.2	Roles and responsibilities answer security information
	A5.3	Separation task
	A5.4	Not quite enough answer management
	A6.1	Filtering
	A6.2	Terms and conditions Work
	A6.3	Awareness will security information, education, and training
	A7.11	utility supporters
BC 2	A8.1	Device user
	A8.3	Restrictions access information
	A6.6	confidentiality or <i>non-disclosure agreements</i>
BC 3	A6.4	Disciplinary process

Observation Implementation PBJ Certification

Then, the researcher observes Suite implementation certification procurement goods/services government. Observation this covers room work, devices and assets used, data transfer processes, flows assignment, and implementation exam certification. That alone. From the observation of the results, the researcher finds that the implementation of PBJ certification exists. ISO 27001:2022 controls were already carried out. The results of observations on PBJ certification are shown in Table 3.

Table 3

Observations Implementation PBJ Certification

Control	Clauses / Controls Related
Organizational Controls	A5.5, A5.6, A5.7, A5.11, A5.18, A5.25, A5.27, A5.33, A5.34
People Controls	A6.8
Physical Controls	A7.2, A7.3, A7.4, A7.8, A7.9, A7.12, A7.13
Technological Controls	A8.2, A8.4, A8.10, A8.11, A8.24, A8.30, A8.31

Observation results shows that the Directorate Certification LKPP profession has Enough Lots

apply Security Information in the implementation certification procurement goods/services government. It still needs to be poured with complete enough with existing regulations arranged. Details clause/control related to ISO 27001:2022, which has been held in PBJ certification, is shown in Table 4.

Table 4

Existing Clauses / Controls Held

Control	Clauses / Controls Related	Name of Clause / Control	
Organizational Controls	A5.5	contact with party authorized	
	A5.6	contact with group interest special	
	A5.7	<i>Threat intelligence</i>	
	A5.11	Return asset	
	A5.18	Access rights	
	A5.25	Judgment and decision in incident security information	
	A5.27	Learning from incident security information	
	A5.33	Protection to Recording	
People Controls	A5.34	Privacy and protection information identity private (PII)	
	A6.8	Reporting incident security information	
	A7.2	Physical entries	
	A7.3	Security offices, rooms and facilities	
Physical Controls	A7.4	Monitoring Security Physique	
	A7.8	Placement and Protection Equipment	
	A7.9	Security outside assetslocation	
	A7.12	Cable Security	
	A7.13	Maintenance equipment	
	A8.2	Privileged Access Rights	
	A8.4	Access to source code	
	A8.10	Deletion information	
	Technological Controls	A8.11	Data masquerade
		A8.24	Use cryptography
A8.30		Development outsourcing	
A8.31		Separation environment (server) for development, test, and production.	

Framework Proposed Work

Based on studies Certification QMS documents and field observations _ related Suite implementation Certification Government procurement of goods/services , researchers propose A framework Work security information on the system BJP certification . Researcher map existing conditions into 3 types control like shown in Table 5.

Table 5

Type of Control

Control	Condition
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Control 1	Control already contained in the Certification QMS
Control 2	Control already run in implementation certification
Control 3	Control yet, there is in system BJP certification





Framework Work security information on the system certification procurement goods / services proposed government shown in Table 6.

Table 6

Framework Proposed Work

Control	annex									
	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.10
Organizational	5.11	5.12	5.13	5.14	5.15	5.16	5.17	5.18	5.19	5.20
Controls	5.21	5.22	5.23	5.24	5.25	5.26	5.27	5.28	5.29	5.30
	5.31	5.32	5.33	5.34	5.35	5.36	5.37			
People Controls	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8		
Physical	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	7.10
Controls	7.11	7.12	7.13	7.14						
	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	8.10
Technological	8.11	8.12	8.13	8.14	8.15	8.16	8.17	8.18	8.19	8.20
Controls	8.21	8.22	8.23	8.24	8.25	8.26	8.27	8.28	8.29	8.30
	8.31	8.32	8.33	8.34						

Description:

-  Control 1
-  Control 2
-  Control 3
-  Not yet identified through studies documents and observations

Researchers propose a framework for Work security information on the system PBJ certification based on a matrix in Table 6. Framework Work proposal This describes LKPP as composer regulation and implementation PBJ certification that the annex contained in control 3 is a necessary priority in drafting regulation about System Certification Quality Management next. This caused control 3, yet there is in regulation and yet held in implementation BJP certification. The next thing you need included in preparation for QMS Certification is control 2. The annex contained in this control two is already done in PBJ certification by LKPP; however, a regulation covers it. While in control 1, QMS certification already loads regulation-related security information and runs in implementation BJP certification.

4. Conclusion

From research this, researcher find that so far this LKPP through Directorate Certification Profession has apply part from control security information contained in ISO 27001:2022. There are 11 existing controls contained in the Certification QMS , 24 controls that have been held but Not yet There is regulations that cover it , and 45 controls that have not there is in QMS Certification and yet implemented in implementation BJP certification. Framework Work This expected help ensure that related entities with certification procurement consider and protect aspect security information in the entire PBJ certification process. Framework Work security information also strengthens protection to information sensitive involved in PBJ certification, including its scope in personal data protection. With ensure security information, framework Work. This help prevent no access valid, changes that are not desired, or possible data theft harm involved parties. This paper Still can developed by research furthermore in 13 controls that have not can identified through method studies documents and observations.

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