Vol. 10, No. 01, January 2026, pp. 1-13

INTERNATIONAL JOURNAL OF INNOVATION IN ENTERPRISE SYSTEM

Journal homepage: https://ijies.sie.telkomuniversity.ac.id
e-ISSN: 2580-3050, DOI: https://doi.org/10.25124/ijies.v10i01.10565

Bridging the Governance Gap: A Design Science Research Approach to Public Value-Driven Meso-Architecture in Indonesia's Digital Government

Eka Putra Mahardika Putuasduki[1*], Prasetyo Utomo[2]

[1] Office of the Deputy of Government Digital Transformation
Ministry of State Apparatus Empowerment and Bureaucratic Reformation Republic of Indonesia, Jakarta, Indonesia
ekaputra.putuasduki@gmail.com

[2] Directorate of Archive Information Technology
National Archive Republic of Indonesia, Jakarta, Indonesia
prasitio.utomo@anri.go.id

[*]Corresponding Author

ARTICLE INFO

Article history:
Received 16 January 2026
Accepted 20 April 2026
Published 11 June 2026

Keywords:
Digital Government Architecture; EA6 Cube; SRIKANDI; Public Value Theory; Design Science Research

ABSTRACT

Indonesia's transition from technocentric Electronic-Based Government System (SPBE) to Digital Government Architecture (PemDi) necessitates a paradigm shift toward Public Value Theory. This study aims to bridge the governance gap between national strategies (Macro) and agency operations (Micro) by developing a meso-level architecture for the SRIKANDI-SIKN ecosystem. An architectural artifact was produced on the basis of regulatory analysis and interviews as the methods of qualitative Design Science Research (DSR). Two formal events of expert synthesis, involving strategic policy makers and technical architects, were used to validate the artifact to create structural consistency and usefulness. This research extends enterprise architecture scholarship by formalizing public value, specifically fiscal efficiency and data sovereignty, as measurable design constraints within the EA6 Cube. Key findings reveal that the implementation of Hybrid API Gateway is a successful tool in system dualism management, whereas the Shared Responsibility model is also applied to address the accountability tension between central and local organizations. By establishing an auditable traceability chain, this study proves that meso-platforms serve as strategic levers for national alignment. The validated framework provides a rigorous pathway for transitioning from fragmented silos to integrated, value-driven digital ecosystems, supported by a measurable validation roadmap for national scalability and citizen-centric impact.

This is an open access article under the CC BY-NC-SA license.

1. INTRODUCTION

1.1. Background

The Government of Indonesia is undergoing a major strategic re-coalition and is moving off the Electronic-Based Government System (SPBE) to the Digital Government Architecture (PemDi), by the requirement of Presidential Regulation No. 82/2023. This evolution is not merely a technical upgrade but a structural shift toward a federated digital ecosystem rooted in Public Value Theory. Although legacy SPBE framework was based on the use of generic framework based on a domain taxonomy of Business, Data, and Application, it frequently faced limited reuse and fiscal wastefulness within and between government agencies [1], [2]. The PemDi model approaches these complexities by promoting an advanced three level segmentation (Macro, Meso and Micro), as shown in Figure 1. This layered or segmented structure is made to coordinate intricate dynamics of national digital integration, so ICT investments are not just effective but also can provide socio-political returns that can be measured [3], [4], [5].

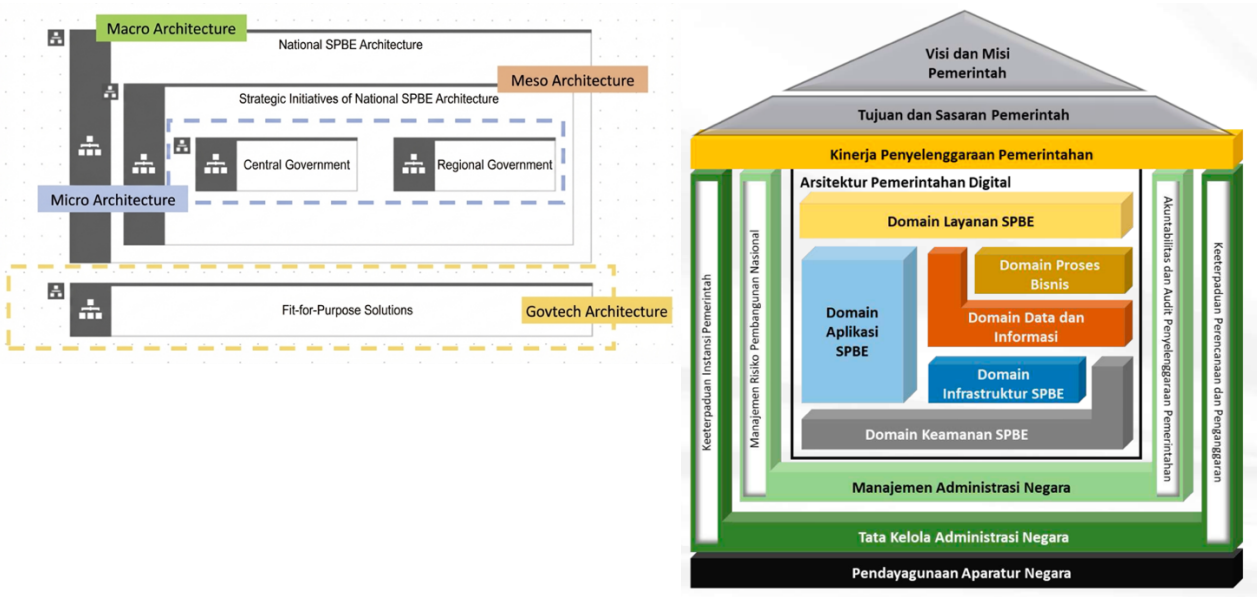

Figure 1 – Concept Design of Digital Government (Pemdi) Architecture, a development of SPBE Architectural Design

As Figure 1 illustrates, the Macro level includes national policies and regulatory frameworks, the Meso level includes common national platforms, and the Micro level includes agency-specific implementation. The meso-level platform at the center of the national change, which is the foundation of the primary case sample of this study, is Integrated Dynamic Archival Information System (SRIKANDI). SRIKANDI is theorized as a common service to digital archiving throughout all government hierarchies, which is meant to remove data silos and streamline workflows in administration [6], [7]. Nonetheless, its implementation at state level throughout the country has revealed a chronic absence of governance. Although there are evident macro-level requirements, the platform faces systematic opposition and micro-technical troubles in the micro-level (local agencies). This tension is based on the non-alignment of the technical design of the system with the provision of materialized public value, including information sovereignty and financial accountability. According to the latest literature on enterprise systems, the success of digital government depends on the correspondence between the quality of systems and the perceived strategic utility of these systems by institutional actors [8]. Without a holistic framework, through which these layers of architecture can be reconciled, such initiatives as SRIKANDI are likely to turn out to be high-cost infrastructure with low institutional benefits.

In spite of these requirements, there is a vicious absence of connection between macro-level national strategies and micro-level agency functioning. The underlying issue found in the paper is the so-called 'Meso Ambiguity' a structural failure to offer the coherent and auditing bridge that can be used to implement the high-level policy intentions into the working systems in a measurable form. In the absence of this meso-level engine, the digital transformation of Indonesia is stalled in a loop of financial wastefulness, wrinkled information silos, and a prevailing divide on creating value to people.

*Corresponding author: ekaputra.putuasduki@gmail.com

1.2. Research Question

In order to deal with the cited gap in governance, the present study develops the following research questions:

1. RQ1: What is the systematic way to design an enterprise architecture framework functioning to build the governance gap between digital grand strategy and digital agency execution at the macro-level and micro-level?
2. RQ2: How can the Public Value Theory be modelled as design constraints in the context of a meso level architecture to alleviate institutional resistance and redundancy?

1.3. Research Objectives

The principal aim of this research is to come up with a meso-architecture blueprint of a public value EA6 Cube framework. In particular, the study is going to fulfill the following Design Science Research (DSR) goals:

1. Objective 1 (Problem Identification): The identification and mapping of the governance constraints and the factors of the so-called Meso Ambiguity in the Indonesian archival digital ecosystem.
2. Objective 2 (Design and Development): Design a meso-level architectural artifact that creates an audited traceability connecting national regulations (Why), design options (What), and technical elements (How).
3. Objective 3 (Evaluation): To validate the utility and feasibility of the proposed artifact in bridging the gap between macro-level requirements and micro-level implementations by the expert synthesis.

Through these purposes, this research paper presents a strict mechanism of the element of transforming fragmented silos into integrated and worth-driven digital environments.

1.4. Literature Review

1.4.1. Comparative Enterprise Architecture Frameworks

Recent literature shows that most implementations continue to be based on the traditional models like TOGAF and FEAF even though Indonesia and Malaysia are the global leaders in EA adoption in the public sector [9], [10], [11]. Nevertheless, there are frequent problems with sustainability and cross-agency integration in these frameworks because of the enterprise-centric nature of these structures. Table 1 gives an overview of the comparative situation of studies on EA in the public sector.

Table 1 – Comparative Analysis of Public Sector EA Studies

Study	Framework/Focus	Key Findings	Identified Gap
Bakar et al. (2020) [12]	TOE Framework	Success depends on Policy, Change Management, and Leadership factors.	Lacks a specific architectural blueprint for meso-level platforms.
Ahmad et al. (2020) [13]	EA Adoption Factors	Complexity and lack of management support hinder EA adoption.	Does not address the "Macro-Micro" governance gap in federated systems.
Singh et al. (2023) [8]	Citizen Feedback	Practitioners struggle to integrate citizen needs into architectural design.	Focuses on feedback mechanisms rather than structural EA design.
Hussein et al. (2017) [10]	EA Sustainability	Inflexibility of IT structures leads to unfavorable EA implementation outcomes.	Suggests a need for more flexible and holistic architectural models.
Prihastomo et al. (2024) [9]	EA SLR in Govt	Popular frameworks (TOGAF/FEAF) dominate but face bureaucratic inertia.	Highlights the need for frameworks that accommodate local operational autonomy.
Trimanadi & Sensuse (2025) [14]	GEA Implementation	Implementers struggle with misinterpretations of GEA objectives and execution gaps.	Lack of standardization in translating high-level goals into executable blueprints.

Conventional models like TOGAF are strong at lifecycle management of a single enterprise but do not explicitly include the Threads, such as security, standards, and workforce, to negotiate the federation challenges of a national digital ecosystem [15]. Moreover, Trimanadi and Sensuse (2025) establish an essential execution gap in the Indonesian context where implementers often misunderstand high-level GEA goals and perceive them as administrative compliance, but not strategic transformation tools [14]. This observation highlights the importance of a formalized architectural translation layer, as suggested in this work, to make sure that national digital strategies are properly translated into standardized operations elements at the meso-level.

*Corresponding author: ekaputra.putuasduki@gmail.com

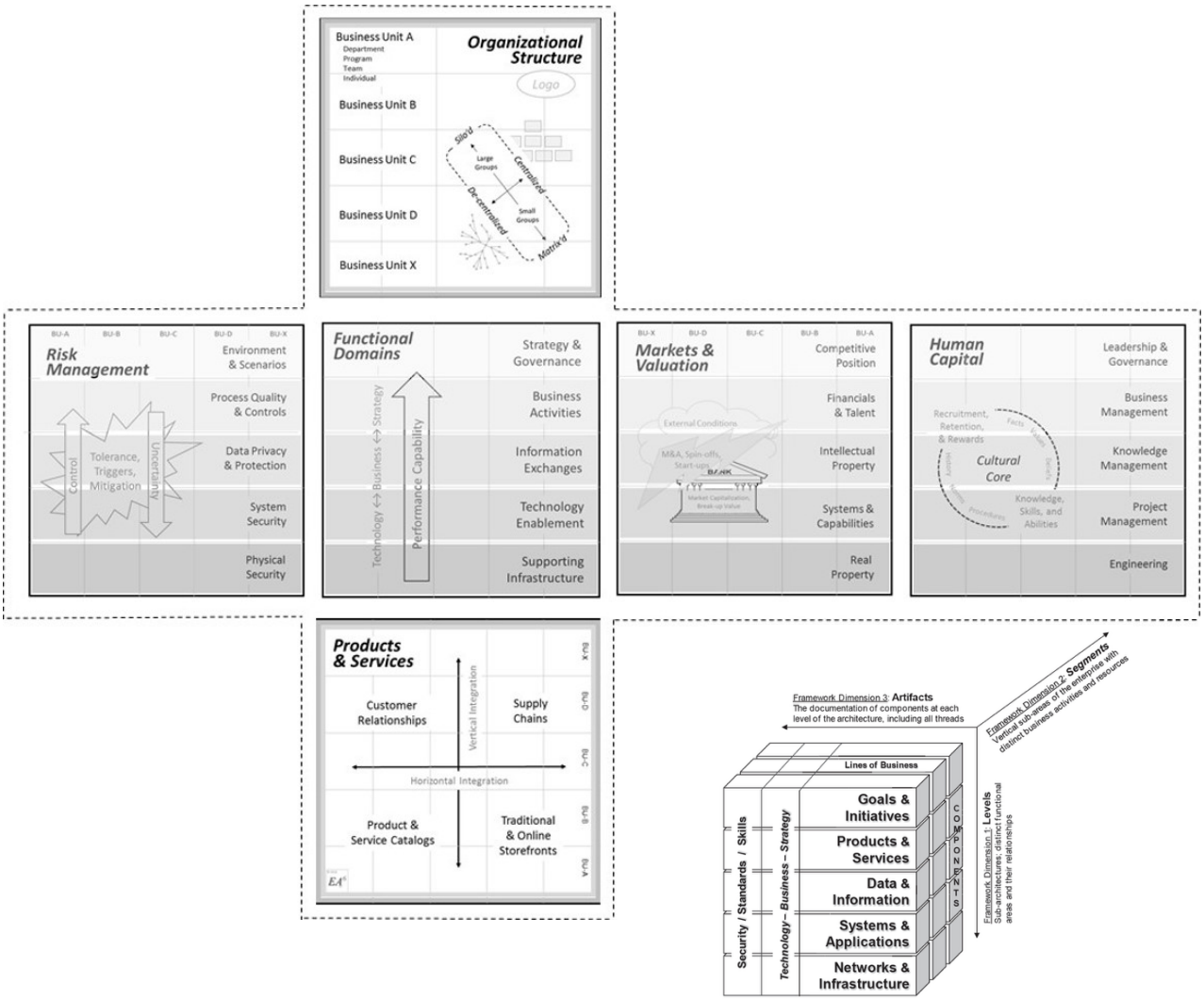

Figure 2 – Visualization of EA6 Cube (left-side) and Segmented into EA3 Cube (right-side) as Design by Scott A. Bernard

This study overcomes these constraints by choosing EA6 Cube as the main framework [16], conceptually represented in Figure 2. This multi-dimensional nature of the EA6 Cube creates the possibility to segment PemDi into Macro-Meso-Micro layers and consequently create a strategic map lacking in TOGAF. Through EA3 as a pen detail (Zoom-In) lens in EA6 Meso-layer, this study gives the technical accuracy of interoperability and yet retains the high-level governance threads that have been determined as critical success factors in earlier literature [12], [17].

1.4.2. Digital Government Public Value

The Digital Government transition will require a new architectural paradigm being not limited to systems and data but also encompassing the socio-technical aspects of public value [18], [19], [20], [21], [22], [23]. As highlighted by Singh et al. (2024) [8], practitioners are usually in a dilemma when trying to reflect citizen needs in an architectural design due to the fact that the existing models are more concerned with internal efficiency. Moreover, Ahmad et al. (2020) recommend that the process of organizational adoption is very much subject to stakeholder perceptions over system proficiency in achieving strategic objectives [13]. Existing research on the sense of public value tends to involve high-level citizen satisfaction but does not map this into a technical design constraint [24]. In this study, the gap has been addressed through the synthesis of the public value parameters into the domains of the EA and the technical interoperability, including the API standardization and shared infrastructure, has been carefully designed to meet the wider strategic ends, including fiscal efficiency and administrative transparency.

1.4.3. SRIKANDI as a Meso-Level Engine for SIKN

SRIKANDI as the national shared platform on managing digital records in Indonesia is a mandatory one. Although its first implementation research involved technical adoption in single agencies [6], [7], its use is currently changing to a

Meso-Level Engine that serves the broader SIKN (Sistem Informasi Kearsipan Nasional) ecosystem [5], [7], [25], [26], [27], [28], [29], [30]. Preliminary interviews with archival technology experts at the National Archives (ANRI) confirm that the primary implementation challenge lies in the integration of SRIKANDI into the national SIKN ecosystem rather than its isolated technical features. This change is consistent with Bakar and Selamat (2016) [15], who state that the presence of documentation does not imply success unless it is applied in the framework of core business requirements. The redefinition of SRIKANDI as a Meso artefact makes it possible to design it with a balance between national standardization and micro level- operational autonomy of micro agencies.

The strength of EA6 is that it models the architecture of architecture based on its multidimensional and modular design. This offers a suitable theoretical basis to resolve the issue of the public service fragmentation frequently produced by the absence of consideration of non-technical elements like workforce preparedness and the clearness of the governance framework.

1.4.4. Design Science Research (DSR) as a Validation Engine
The fundamental unit of scientific engine in this study is Design Science Research (DSR), which is the device of providing auditable traceability [31], [32]. Through DSR, the study will make sure that all the meso-level architectural units are directly associated with a macro-level requirement and justified by a sequence of evidence. This conservative method responds to the criticism by Ramos et al. on the overall tendency of EA studies in the public sector to rely on speculative arguments [33]. Moreover, the DSR process enables an iterative loop of artefact development, thus the design decisions would be transparently explained to reduce the usual problems of disjointed IT environment and bureaucratic inertia observed in large scale government projects [32], [34].

1.4.5. Research Gap and Comparative Positioning
The study is remarkably placed to overcome the shortcomings of earlier studies on EA adoption within the public sector. Previous research on the topic of public sector EA has been critiqued as being based on the speculative arguments but not on empirical research of this subject [33], [35]. The present study addresses this by using a Design Science Research (DSR) methodology, which makes sure that the architectural artefact is based on actual evidence in the real world and has a chain of justification that can be audited.

In addition, to have good implementation of EA, organizations should identify and design tailored solutions compatible with their unique core business requirements [4], [13], [15], [36], [37]. The given work satisfies this explicit gap by expanding EA6 Cube framework by Scott Bernard into developing a dedicated Meso-Micro model of the PemDi ecosystem. This study presents a comparative positioning unlike the traditional studies that use narrative descriptions, since it infuses the EA domains with Public Value Theory into the system. The technique offers an auditable chain of traceability, macro strategy to technical meso-components, which was previously not available in architectures of archival systems.

2. METHOD

This study is operationalized in a qualitative approach through which the DSR framework is operationalized in its entirety. The details of the implementation of each research cycle are the following:

2.1. Design Science Research (DSR) Framework and Traceability Logic

In this research, we used a qualitative Design Science Research (DSR) paradigm, the framework that is designed to build an auditable traceability chain. The DSR framework is based on a logic of Chain of Evidence, which tracks the empirical data related to interviews and regulations to functional requirements that in turn defines the design decisions in the EA6 domains. This means that all architectural aspects of the SRIKANDI-SIKN blueprint are based on strategic mandates and gaps in governance.

2.2. Research Design and Sampling Procedures

The general research design is predicated on the iterative cycles of DSR, which provides the methods of research with a high sense of transparency and traceability. The overall research design is based on the iterative cycles of Design Science Research which is depicted in Figure 3.

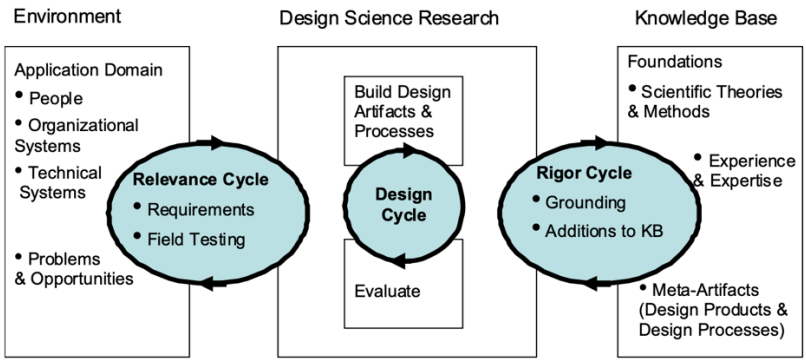

Figure 3 – The Three Cycle of Design Science Research Methods

As mentioned, Figure 3 demonstrates that the research process is carried out in 4 separate phases and that it is methodologically transparent and traceable:

2.2.1 Phase 1: Problem Identification and Motivation
The first action was to identify a governance gap in the transition of SPBE to the Digital Government Architecture (PemDi) in Indonesia. This was done by a systematic review of Presidential Regulations No. 95/2018 and No. 82/2023 and preliminary research, incorporating archival technology professionals at the National Archives (ANRI). The main objective was to determine the structural aspects that impede the adoption of national shared platforms on the micro-level (local agencies).

2.2.2. Phase 2: Definition of Objectives for a Solution
The identified gaps were used to set the objectives based on the Public Value Theory and the Performance Reference Model (PRM). This step characterized the Why model of the architecture, establishing certain design limitations in the areas of financial efficiency, data sovereignty, and administrative transparency. These goals acted as the non-functional requirements to influence the further architectural modelling.

2.2.3. Phase 3: Design and Development
The core artifact, a meso-level architectural prototype, was developed by extending Scott Bernard's EA6 Cube. During this phase, the six dimensions of the EA6 Cube (Organizational Structure, Functional Domains, Risk Management, Market & Valuation, Human Capital, and Products & Services) were mapped across the Macro, Meso, and Micro layers of the PemDi ecosystem. The EA3 methodology was utilized as a detailed (Zoom-In) lens to provide granular technical specifications across the Strategy, Business, Data, Application, and Infrastructure levels for the meso-layer.

2.2.4. Phase 4: Evaluation and Validation
The qualitative evaluation of the artefact was the last step, which implied the official Expert Synthesis protocol. The blueprint was shown to a team of government enterprise architects and senior developers in order to assess its utility and feasibility and traceability ability between regulatory requirements and technical configurations.

2.3. Participant Profiles and Instrument Development
The study employed purposive sampling in an attempt to interview strategic stakeholders in the digital governmental ecosystem. The participants were chosen according to their skills and the power of their institutions to issue a comprehensive cheque on the architecture:

- Strategic Policy Executives: Represented by a senior official (Assistant Deputy level) from the Ministry of State Apparatus Empowerment and Bureaucratic Reform (Kemen PAN-RB) to provide the macro-level regulatory and strategic perspective.
- Core Technical and Development Professional: Including the lead system architect and a group of technical computer officers (Pranata Komputer) from the National Archives (ANRI) who are directly responsible for the development and maintenance of the SRIKANDI platform.
- Academic and Informatics Specialist: Represented by an academic expert from a private higher education institution specializing in Informatics to offer an independent theoretical and technical assessment.

The interview and FGD protocols consisted of a Theory-led Interview Guide, which was specifically mapped to the six dimensions of EA6 Cube (Workforce, Functional, Value/Valuation, Services, PRM, and Infrastructure). In order to achieve academic rigor, the Public Value dimensions were operationalized in accordance with the framework designed

by Twizeyimana and Andersson (2019) [20], i.e., (1) Service Delivery & Quality, (2) Trust and Legitimacy, (3) Social, and Cultural Value, (4) Economic and Finance Value, and (5) Political/Democratic Value.

2.4. Data Collection and Qualitative Procedures

Data gathering was done through a systematic process in order to be reliable:

1. Documentary Triangulation: A systematic analysis of Perpres 95/2018, Perpres 82/2023, ANRI Strategic Plan 2025-2029, and technical documentation.
2. Theory-Based Semi-Structured Interviews: The interviews were done through the use of the EA6-dimension guide. Theoretical saturation came in the 10th interview where no new theme during the process of governance gaps or structural resistance came into the focus.
3. Thematic Coding: Transcripts were processed in two phases (open and axial coding) to be able to identify design constraints that the Meso-architecture will possess, as well as connecting insights of the respondents to the domains of EA6s.

2.5. Concrete Evaluation Protocol (Artifact Validation)

The artifact was evaluated using five structured criteria mapped to the SPBE/PemDi, as summarized in Table 2.

Table 2 – Research Method Evaluation Protocol

Criteria	Description	Mapping to SPBE/PemDi
Completeness	Ability to cover all 6 domains of EA6.	Holistic Coverage
Consistency	Alignment between Macro strategy and Micro execution.	Strategic Alignment
Feasibility	Readiness of PDN and JIP to host the Meso-engine.	Technical Readiness
SPBE Compliance	Adherence to national interoperability standards.	Regulatory Fit
Public Value	Measurability of fiscal efficiency and transparency.	Outcome Orientation

The artifact evaluation was conducted through two formal rounds of Expert Evaluation (Expert Synthesis), moving beyond informal discussions to a rigorous validation protocol:

- Round 1: Macro-Regulatory Alignment. This stage determined the conformity of the artefact to the national policies and the PRM. The main deliverable was the enhancement of the Shared Responsibility Security Model so that the centralised PDN controls will not violate the auditability of the agencies.
- Round 2: Technical and Micro-Implementation Feasibility. This stage concerned the practical issues of the Meso ambiguity and dualism of the system. The synthesis led to the introduction of the Hybrid API Gateway which is a refined design that enables coexistence of legacy agency systems with the national meso-platform.

This two-step verification will help this research to show that results in Section 3 are not just the creation of the researcher, but they are validated results with cross-institutional and expert agreeance.

2.6. Trustworthiness and Bias Mitigation

To ensure the validity and reliability of the findings, the following trustworthiness steps were implemented:

- Data Triangulation: Cross-referencing interview data with national policy documents and technical log samples of SRIKANDI usage.
- Member Checking: After each interview and FGD, a summary of findings was sent back to the participants to verify that the interpretation accurately reflected their expertise.
- Peer Debriefing: The architectural mapping logic was reviewed by external EA practitioners to mitigate researcher bias in selecting EA6 "Threads."
- Audit Trail: All raw data, coding sheets, and version-controlled artifact drafts are maintained as an auditable record of the research process.

3. RESULT AND DISCUSSION

3.1 Empirical Evidence: Thematic Synthesis of Evidence

The qualitative review of the interview transcripts and strategic plan of the 2025-2029 National Archives (ANRI) shows that an urgent intervention must be at the meso-level. This research paper will determine four major themes that are the empirical basis of the architecture. To start with, there is a state of possessing a degree of "Meso Ambiguity" in which practitioners usually narrow a shared national platform into a technical API interface, without considering the holistic governance to federated systems. Second, there is a clear "Alignment Gap" between macro-level national mandates, such as Presidential Regulation No. 82/2023, and micro-level agency operations.

Third, the Performance Reference Model (PRM) is also essential, under which strategic objectives such as “Budaya Tertib Arsip" (Archival Discipline Culture) should be transformed into performance metrics to make sure it becomes Memori Kolektif Bangsa (National Collective Memory). Last but not least, the SRIKANDI platform offers technical utility, but its expanded Public Value, namely, fiscal cost-efficiency and information sovereignty, should be institutionalized in the form of design constraints. Such findings imply that there is a need to have an architectural bridge linking policy intent and technical realization.

3.2. Master Traceability Matrix: Linking Evidence to Design

Table 3 shows that the suggested architectural elements react to certain empirical issues and regulatory requirements. This matrix is the conceptual connectivity between phase 1 (problem identification) and the phase 3 (design) of the DSR cycle and acted as chain of evidence.

Table 3 - Master Traceability Matrix for SRIKANDI-SIKN Meso Architecture

Trace ID	Source of Evidence (Problem/Context)	Regulatory Mandate (Macro)	EA6 Meso Domain	Proposed Public Value Outcome
TR-01	Misinterpretation of "Meso" as just an API connection or API hub.	Presidential Reg. 82/2023 Art. 14.	**Standards & Application**	Information Sovereignty & Data Reliability.
TR-02	Fragmentation and focus on institutional silos.	Presidential Reg. 95/2018.	**Strategy & Business**	Fiscal Efficiency (No Duplicate Systems).
TR-03	Concerns regarding security audit compliance in shared services.	SPBE Audit Standards & ISO 27001.	**Security**	Trust & Legal Non-Repudiation.
TR-04	Operationalizing "Budaya Tertib Arsip" or Archival Order Culture through performance (Renstra ANRI).	National Archival Reform Strategy.	**Workforce**	Professionalism & Talent Management.
TR-05	The need for SRIKANDI to evolve into the SIKN ecosystem.	SIKN National Mandate.	**Valuations**	Service Sustainability & Collective National Memory.

The findings in Table 3 suggest that the meso-layer is an important translation engine. With the Public Value Theory applied to the Strategy and Workforce domains and the PRM as one of the main secondary catalysts in the Valuations domain, the architecture becomes an outcome-based model as opposed to being system-centric. The TR-04 and THE TR-05 mapping pays a particularly close attention to the Meso Ambiguity present in the development team that offers the formal framework in the mapping of non-technical indicators that hitherto did not have a mapping.

3.3. The Proposed Design Artefact Mapping of PemDi Domains of EA6 Meso-Architecture

In order to fill in the specified "Design Gap," this paper will map the new Indonesia Digital Government (PemDi) domains of interest to the EA6 Cube and EA3 Threads. Such mapping will make sure that the Guardrails of governance, such as Audit, Risk, and Human Capital, are incorporated into the meso-layer.

3.3.1. Holistic Architecture Mapping: EA6 Cube in Macro-Meso-Micro Context

Table 4 details the proposed structural segmentation of the EA6 domains across the three tiers of the PemDi ecosystem.

Table 4 – Design Artifact Mapping of PemDi Domains to EA6 Meso-Architecture

EA6 Domain	Macro (Policy Level)	Meso (Shared Service / SRIKANDI)	Micro (Agency Level)	Validation Refinement
Strategy	Digital Gov Roadmap.	SIKN Ecosystem Orchestration.	Local Performance Targets.	Linked to Bureaucratic Reform (RB) Index.
Business	Nat. Business Process.	Shared Records Management.	Agency Admin Workflows.	BPR standardized for all agency hierarchies.
Data	Satu Data Indonesia.	National Archival Metadata.	Local Data Repositories.	Integration of National Data Dictionary (KDM).
Application	Common Service Mandate.	SRIKANDI v3 (API-First).	Legacy Local Apps.	**Hybrid API Gateway** added for legacy support.

*Corresponding author: ekaputra.putuasduki@gmail.com

EA6 Domain	Macro (Policy Level)	Meso (Shared Service / SRIKANDI)	Micro (Agency Level)	Validation Refinement
Infrastructure	National Data Center.	PDN Cloud Hosting.	Local Agency Hardware.	Multi-site redundancy for fiscal protection.
Security	SPBE Audit Standards.	Shared Security Control.	User Access Compliance.	**Shared Responsibility Model** (PDN-Agency).

3.3.2. Detailed Operational Meso Architecture: EA3 Thread Implementation
To provide technical precision for the Meso-layer (SRIKANDI), the EA3 perspective is utilized to detail the functional "Threads."

Table 5 – Design Artifact EA3 Operational Threads for Meso-Layer

Thread Name	Operational Component	Public Value Alignment	Refinement Post-Validation
Application	Microservices Architecture & API-First.	Velocity & Scalability.	Introduction of *Message Broker* for async tasks.
Security	RBAC, Encryption (AES-256), & TTE BSrE.	Trust & Legal Validity.	Automated audit logs for every TTE transaction.
Infrastructure	Jaringan Intra Pemerintah (JIP) & PDN.	Fiscal Efficiency.	Priority bandwidth for high-traffic local agencies.
Valuations	Public Value Dashboard & Cost Avoidance.	Accountability.	Real-time monitoring of "Paperless Savings" index.

3.4. Artifact Evolution and Expert Validation Outcomes
In order to meet empirical validation requirement, the initial proposed architecture (Tables 3 and 4) was subjected to two syntheses of experts. This step is very important so that the conceptual design can be a viable design in the Indonesian administrative setting.

3.4.1. Round 1 Structural and Regulatory Refinement.
During the first round, assessed the compatibility of the EA6 Cube with the existing national policies on digital matters by the Ministry of State Apparatus Empowerment and Bureaucratic Reform. The first and most important discovery was that the original Security domain (Table 4) was excessively centralized, which was inconsistent with the operations of the local agencies.

Original suggestion: full control by the meso-platform provider on security management only.
Validated Refinement: The Introduction of the Shared Responsibility Model. This explains why the first tier of the PDN infrastructure security is distinct and independent of the second level which is data integrity on a micro-level, eliminating TR-03.

3.4.2. Round 2: Interoperability and Feasibility Refinement.
The second was dedicated to the technical feasibility and the provision of or inclusion of archival values (TR-04 and TR-05). ANRI experts also expressed the threat of implementation dualism, by which the existing local systems could prove to be an obstacle to the adoption of SRIKANDI.

First Proposal: The transition to the national platform should take place immediately and completely with generic legacy local systems.
Validated Refinement (The Hybrid Bridge): Adding a Hybrid API Gateway. This enables the legacy systems to co-exist without having traceability to national metadata standards (ISAD-G), directly overcoming the system dualism risk. Also, to the EA3 mapping, a Valuations Thread was included, which assumes a Public Value Dashboard and the Archival Index as performance indicators that can be measured.

Table 6 - Proposed Artifact Mapping of PemDi Domains to EA6 Macro-Meso-Architecture Alignment

PemDi Domain Layer	EA6 Cube Domain (Meso)	EA3 Operational Thread	Alignment Rationale
Human Resource (SDM)	**Human Capital**	Workforce Thread	Standardizing "Archival Discipline" competencies across all government hierarchies.
Management Domain (Audit, Risk, Accountability)	**Risk Management**	Security Thread	Implementing a Shared Responsibility Model with the National Data Center (PDN).
Performance Domain (PRM)	**Markets & Valuation**	Performance Thread	Converting SRIKANDI usage into Public Value Dashboards (e.g., Cost Avoidance).
Governance Domain (Planning & Budgeting)	**Organizational Structure**	Standards Thread	Ensuring ICT investments are synchronized through "Clearance SPBE" protocols.
6 Core Tech Domains (Business, Data, Apps, etc.)	**Functional Domains & Products**	Application & Data Thread	Orchestrating SRIKANDI-SIKN as a shared national ecosystem.

3.5. Discussion and Comparative Analysis

In contrast to classical models like TOGAF with enterprise focus, in which organization internal lifecycles are mainly pursued, the suggested model EA6-EA3, referring to the PemDi, clearly goes targeting the federative complexity of digital government. The methodology is based on the realization of performance foundations introduced in the previous literature [17] but extends them through incorporating Public Value as an essential design element [20], [38]. The Hybrid API Gateway proposed is a solution to the inflexibility problems of Hussein et al., Fajar et al., Sukatmi et al [10], [39], [40] and offers a viable mechanism to close the execution gap identified by Trimanadi and Sensuse (2025) [14].

The pre-assessment sessions with experts affirmed that the division into Macro-Meso-Micro is critical to address the issue of so-called "Meso ambiguity" detected in the technical interview. The architecture establishes that the workforce and valuations have a distinct "Thread" so the values of the archival items are no longer to be held by a metric immeasurable but can now be measured to become performance indicators. The national ICT investment warrants this structural alignment because it offers a clear chain of evidence of the policy intent to technical realization.

Although the analysis has confirmed the usefulness of the EA6 Cube in the context of archival systems, the generalization to the applicability process is limited to the situation in the Indonesian administrative setting. In future studies, this model should be applied in a variety of shared-service areas, including health, permit, or social services, to ensure its validity outside of archival informatics.

4. CONCLUSION

4.1. Conclusion

The change in a technocentric Electronic-Based Government System (SPBE) to a value-driven Digital Government Architecture (PemDi) in Indonesia is a paradigm shift in the national digital strategy. This paper finds that a systematic meso-level enterprise architecture can help to reconcile the governance divide between the macro-level requirements and the micro-level application. Through the use of the EA6 Cube framework, this study could effectively create a meso-architecture blueprint of the SRIKANDI-SIKN ecosystem at the level of developing an auditable traceability between the national policy and the technical implementation.

One of the achievements of the research is the formalization of Public Value Management and the Performance Reference Model (PRM) as the main design constraints. The results confirm that the meso-layer is a translation engine which transforms abstract regulatory objectives into tangible architecture. The architecture guarantees that ICT investments yield practical socio-political contributions because its strategic values like the Archival Discipline Culture and National Collective Memory have been operationalized into quantifiable threads. The produced artefact has a structural route through which fiscal redundancy and systemic disintegration can be mitigated as long as national interoperability standards are rigidly applied in all levels of government.

*Corresponding author: ekaputra.putuasduki@gmail.com

4.2. Suggestions

According to the findings of the research and the constraints that have been found in the evaluation process, the following suggestions are made to implement the policies and pursue the further academic research:

1. Standardisation of Architectural Segmentation of policy: It is observed that Indonesian government should institutionalise the Macro-Meso-Micro segmentation through incorporation of future policies, policy. The standardisation will also facilitate the fact that all national common services comply to a common architectural pattern, and this will keep the technical development teams out of the "Meso Ambiguity" that are a common occurrence.
2. Introduction of Value-Driven Performance Dashboards: The government agencies must stop focusing on digital transformation in terms of mere adoption levels. It is proposed to put in place Public Value Dashboards as discussed in this paper, which, using PRM, tracks cost avoidance, administrative speed, and information purity in real-time. The methodology supplies the policymakers with empirical information, which can be used to justify further investment in ICT.
3. Future Research on Quantitative Performance and Citizen Impact: Future working group ought to aim to put the meso-architecture into a programme to quantify it in terms of performance and scalability, by using large-scale testing of the performance and scalability of the architecture with realistic national traffic loads. Also, according to the scheme proposed by Asmawanti-S et al. (2025), the empirical research is necessary to quantify the effect of this architecture on the citizen satisfaction and trust in the population [24]. Such studies would give a more comprehensive picture of the influence of digital government on other aspects other than internal administrative efficiency.

Acknowledgment

The authors appreciate the support and knowledge given by colleagues at the National Archives of Republic of Indonesia (ANRI), the Ministry of State Apparatus Empowerment and Bureaucratic Reform, whose data access and information were helpful in the accomplishment of this study, and Scott Bernard for formulizing the holistic enterprise architecture.

REFERENCES

[1] A. Asianto and G. Firmansyah, “The Design of Indonesia e-Government (SPBE) Governance in Tangerang City,” in *Proceedings of the First Mandalika International Multi-Conference on Science and Engineering 2022, MIMSE 2022 (Informatics and Computer Science)*, Dordrecht: Atlantis Press International BV, 2022, pp. 22–34. doi: 10.2991/978-94-6463-084-8_4.

[2] G. S. N. Kuru, S. F. S. Gumilang, and R. A. Nugraha, “MODEL ARSITEKTUR SISTEM PEMERINTAHAN BERBASIS ELEKTRONIK (SPBE) DOMAIN PROSES BISNIS PADA PEMERINTAH KABUPATEN KUNINGAN,” *JIPI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)*, vol. 6, no. 2, pp. 369–378, Nov. 2021, doi: 10.29100/jipi.v6i2.2116.

[3] M. Hakimi, H. Ghafory, and A. W. Fazil, “Enterprise Architecture in E-Government: A Study of Integration Challenges and Strategic Opportunities,” *International Journal Software Engineering and Computer Science (IJSECS)*, vol. 4, no. 2, pp. 440–452, Aug. 2024, doi: 10.35870/ijsecs.v4i2.2420.

[4] N. A. Ahmad, S. Mohd. Drus, and H. Kasim, “The Effect of Multidimensional Factors on Organizational Adoption of Enterprise Architecture: The Moderating Role of Organization Type,” *J. Phys. Conf. Ser.*, vol. 1962, no. 1, p. 012020, Jul. 2021, doi: 10.1088/1742-6596/1962/1/012020.

[5] “RENCANA PENGEMBANGAN ARSITEKTUR PEMERINTAH DIGITAL,” 2025.

[6] M. Alhadi and R. Rahmawati, “Penerapan Sistem Informasi Kearsipan Dinamis Terintegrasi (SRIKANDI) di Arsip Nasional Republik Indonesia,” *ANTASENA: Governance and Innovation Journal*, vol. 2, no. 2, pp. 167–185, Dec. 2024, doi: 10.61332/antasena.v2i2.243.

[7] M. Teku, J. Gobang, M. Retu, and V. Sedu, “Digital Transformation of Archives through the SRIKANDI Application,” *IJESS International Journal of Education and Social Science*, vol. 5, no. 2, pp. 261–268, Oct. 2024, doi: 10.56371/ijess.v5i2.334.

[8] P. Singh, F. Lynch, and M. Helfert, “Enterprise architecture for the transformation of public services based on citizen’s feedback,” *Digital Policy, Regulation and Governance*, vol. 26, no. 1, pp. 38–54, Jan. 2024, doi: 10.1108/DPRG-11-2022-0123.

[9] Y. Prihastomo, H. Prabowo, A. Trisetyarso, and H. Soeparno, “ENTERPRISE ARCHITECTURE FRAMEWORK IN THE GOVERNMENT SECTOR: A REVIEW,” 2024.

[10] S. Sumarni Hussein, M. Naz’ri Mahrin, and N. Maarop, “Sustainability through Innovations Of Enterprise Architecture (EA) in Public Sector’s Management: Issues & Challenges,” *Journal of Southeast Asian Research*, 2017, doi: 10.5171/2017.722027.

[11] P. R. Y. P. Hadjarati, A. M. Widodo, and B. Tjahjono, "Comparative Analysis of Enterprise Architecture Frameworks Using TOGAF ADM and SPBE Architecture Based on Presidential Regulation No. 132 of 2022," *Eduvest - Journal of Universal Studies*, vol. 5, no. 3, 2025, doi: 10.59188/eduvest.v5i3.1772.
[12] N. A. Abu Bakar, Z. Deraman, M. F. Tarmiji, R. Yusoff, and N. Kama, "Workplace Digitalization in Public Sector Organization Towards Operational Effectiveness: Current Landscape, Issues and Challenges," *International Journal of Innovation in Enterprise System*, vol. 4, no. 01, 2020, doi: 10.25124/ijies.v4i01.50.
[13] N. A. Ahmad, S. M. Drus, and H. Kasim, "Factors That Influence the Adoption of Enterprise Architecture by Public Sector Organizations: An Empirical Study," *IEEE Access*, vol. 8, 2020, doi: 10.1109/ACCESS.2020.2996584.
[14] R. Trimanadi and D. Indra Sensuse, "Understanding Government Enterprise Architecture: A Review and Case Study," *IEEE Access*, vol. 13, 2025, doi: 10.1109/ACCESS.2025.3571742.
[15] N. A. A. Bakar and H. Selamat, "Investigating Enterprise Architecture implementation in public sector organisation: A case study of Ministry of Health Malaysia," in *2016 3rd International Conference on Computer and Information Sciences, ICCOINS 2016 - Proceedings*, 2016. doi: 10.1109/ICCOINS.2016.7783179.
[16] S. A. Bernard, *An introduction to holistic enterprise architecture*, 4th ed. Bloomington: AuthorHouse, 2022.
[17] A. Widiantono and H. S. Sastramihardja, "Penerapan Performance Reference Model Sebagai Model Pengukuran Keberhasilan Implementasi Arsitektur Enterprise SPBE," *Jurnal Ilmu Komputer dan Sistem Informasi (JIKOMSI)*, vol. 5, no. 2, pp. 76–89, Sep. 2022.
[18] H. Guo and S. Gao, "Enterprise Architectures in E-Governments Studies: Why, What and How?," 2020, pp. 3–14. doi: 10.1007/978-3-030-45002-1_1.
[19] K. Julia, S. Kurt, and S. Ulf, "How Digital Transformation affects Enterprise Architecture Management – a case study," *International Journal of Information Systems and Project Management*, vol. 6, no. 3, pp. 5–18, Jan. 2022, doi: 10.12821/ijispm060301.
[20] J. D. Twizeyimana and A. Andersson, "The public value of E-Government – A literature review," *Gov. Inf. Q.*, vol. 36, no. 2, pp. 167–178, Apr. 2019, doi: 10.1016/j.giq.2019.01.001.
[21] H. Alghamdi, "Assessing the Impact of Enterprise Architecture on Digital Transformation Success: A Global Perspective," *Sustainability*, vol. 16, no. 20, p. 8865, Oct. 2024, doi: 10.3390/su16208865.
[22] E. Juraida and D. I. Sensuse, "Enterprise Architecture As An Enabler Of Digital Transformation In The Government Sector: Success Factors And Maturity Evaluation Methodology," *Eduvest - Journal of Universal Studies*, vol. 4, no. 11, pp. 9821–9842, Nov. 2024, doi: 10.59188/eduvest.v4i11.43677.
[23] R. Kapoor, "Digital Transformation and Enterprise Architecture in Government: A Strategic Framework," *European Modern Studies Journal*, vol. 9, no. 4, pp. 1243–1257, Sep. 2025, doi: 10.59573/emsj.9(4).2025.116.
[24] D. Asmawanti-S, N. N. Afiah, H. Ritchi, and H. Suharman, "Literature review of government digital services based on public value theory and citizen perspectives," *Cogent Business & Management*, vol. 12, no. 1, Dec. 2025, doi: 10.1080/23311975.2025.2518494.
[25] A. S. Sari, F. Ruhana, and K. Karno, "Implementasi Kebijakan Sistem Informasi Kearsipan Dinamis Terintegrasi (Srikandi) di Komisi Pemberantasan Korupsi Republik Indonesia," *Syntax Literate ; Jurnal Ilmiah Indonesia*, vol. 10, no. 4, pp. 4336–4349, Apr. 2025, doi: 10.36418/syntax-literate.v10i4.58629.
[26] D. Naufal and G. D. P. Aryono, "Policy Analysis of the SRIKANDI Archiving System in Banten Province," *Jurnal Ilmu Administrasi Negara (JUAN)*, vol. 13, no. 1, pp. 27–34, Jun. 2025, doi: 10.31629/juan.v13i1.7069.
[27] R. Muchlas and S. Sugiyanto, "Implementation of Srikandi Application: Paperless-Based Digital Transformation of Archives," *Jurnal Ilmu Perpustakaan dan Informasi (JIPI)*, vol. 9, no. 2, pp. 314–326, 2024.
[28] "Perampingan Kebijakan Pemerintah Digital," 2025.
[29] "ARAH KEBIJAKAN SPBE MENUJU ERA TRANSFORMASI DIGITAL PEMERINTAH," Jan. 2025.
[30] Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi, "Pergeseran Paradigma: Dari Fondasi Menuju Eksekusi yang Terintegrasi.," 2025.
[31] R. Rizal and S. Nurmantu, "Evaluasi Kebijakan Penerapan Aplikasi Srikandi di Sekretariat Jenderal Dewan Perwakilan Daerah Republik Indonesia Tahun 2023 -2024," *Reformasi Administrasi*, vol. 12, no. 1, pp. 126–133, Apr. 2025, doi: 10.31334/reformasi.v12i1.4692.
[32] E. F. Cruz and A. M. R. da Cruz, "Design Science Research for IS/IT Projects: Focus on Digital Transformation," in *2020 15th Iberian Conference on Information Systems and Technologies (CISTI)*, IEEE, Jun. 2020, pp. 1–6. doi: 10.23919/CISTI49556.2020.9140972.
[33] K. H. Carneiro Ramos, G. A. Dee Souza, and A. F. Rosa, "Literature review studies in public sector's enterprise architecture," in *ICEIS 2019 - Proceedings of the 21st International Conference on Enterprise Information Systems*, 2019. doi: 10.5220/0007750806420649.
[34] P. M. J. Delport, R. Von Solms, and M. Gerber, "Methodological Guidelines for Design Science Research," *Procedia Comput. Sci.*, vol. 237, pp. 195–203, 2024, doi: 10.1016/j.procs.2024.05.096.
[35] D. D. Dang and S. Pekkola, "Systematic Literature Review on Enterprise Architecture in the Public Sector," 2017.

[36] N. A. A. Bakar, N. Kama, and S. Harihodin, "Enterprise architecture development and implementation in public sector: The Malaysian perspective," *J. Theor. Appl. Inf. Technol.*, vol. 88, no. 1, 2016.
[37] M. Kamil, A. E. Sari, and R. Muhammad, "Digital Transformative Resilience: Measuring Urban Governance Capacity to Improve Quality Public Services," *Journal of Government and Civil Society*, vol. 9, no. 1, p. 89, Apr. 2025, doi: 10.31000/jgcs.v9i1.12726.
[38] I. Hadi and I. A. P. S. Widnyani, "Modernisasi dan Digitalisasi Public Servis: Mewujudkan Indonesia Emas Melalui Harmonisasi Sistem Pemerintahan Berbasis Elektronik (SPBE)," *JURNAL KRIDATAMA SAINS DAN TEKNOLOGI*, vol. 6, no. 02, pp. 639–658, Dec. 2024, doi: 10.53863/kst.v6i02.1398.
[39] A. N. Fajar and I. M. Shofi, "Service Oriented Design for Indonesian E-Government System Using SOA," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 598, no. 1, p. 012106, Aug. 2019, doi: 10.1088/1757-899X/598/1/012106.
[40] S. Sukatmi and A. Afriyanto, "IMPLEMENTASI E-GOVERNMENT BERBASIS SERVICE ORIENTED ARCHITECTURE (SOA) PADA KANTOR KECAMATAN NATAR LAMPUNG SELATAN," *Jurnal Informasi dan Komputer*, vol. 7, no. 1, pp. 75–82, Apr. 2019, doi: 10.35959/jik.v7i1.126.

*Corresponding author: ekaputra.putuasduki@gmail.com