

Optimization of Electronic-Based Government System Architecture (SPBE) In The Application Architecture Domain In XYZ District

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KEYWORDS	ABSTRACT
Electronic-Based Government System (SPBE); SPBE Architecture; Optimization of SPBE Architecture	The Electronic-Based Government System (SPBE) is a government administration that utilizes information and communication technology to provide services to SPBE Users as stipulated in Presidential Regulation No. 95 of 2018. SPBE aims to create an integrated government business process between Central Agencies and Regional Governments, form a complete government unit and produce bureaucracy and high-performance public services. To support the implementation of SPBE, the National SPBE architecture is compiled as a detailed guide that covers technical and methodological aspects, ensuring the integration of government electronic systems. This architecture provides convenience in increasing efficiency and effectiveness, as well as being a guide for SPBE governance in Central Agencies and Regional Governments. The XYZ Regency Government has implemented the SPBE architecture as the basis for implementation in its area. This study analyzes the SPBE architecture in XYZ Regency based on the National SPBE architecture to provide optimization recommendations on the application architecture domain. Despite the existence of Presidential Regulation Number 95 of 2018 and Number 132 of 2022, the preparation of government architecture in Indonesia still faces challenges due to the lack of clear guidance. More detailed references are needed as derivatives of existing regulations to ensure consistent and optimal implementation, help agencies understand and implement the SPBE architecture, so that digital transformation towards Indonesia 4.0 is achieved by 2040.

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Introduction

The Electronic-Based Government System (SPBE) is a government implementation that utilizes information and communication technology to provide

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services to SPBE Users as regulated in Presidential Regulation No. 95 of 2018 (Penttinen & Isomäki, 2010).

SPBE is the government's effort to create an integrated government business process between Central Agencies and Regional Governments so that it will form a complete and comprehensive government unit and produce a high-performance government bureaucracy and public services (Isomäki & Liimatainen, 2018).

In an effort to implement the SPBE, the SPBE architecture was developed that provides more detailed guidance on the national architecture of the SPBE, covering various technical and methodological aspects to ensure better integration between government electronic systems (Gregor et al., 2017).

The National SPBE Architecture is an SPBE Architecture that is applied nationally through the integration of all government administration electronically, by describing it in an integrated manner, in all domains in it, so as to provide convenience in increasing the expected efficiency and effectiveness. The National SPBE Architecture provides guidance in SPBE governance in Central Agencies and Regional Governments (Bakar et al., 2014).

The XYZ Regency Government has implemented the SPBE architecture as the basis for the implementation of SPBE in XYZ Regency. In this study, analysts will conduct SPBE architecture in XYZ Regency based on the National SPBE architecture to be able to provide recommendations for optimizing the SPBE architecture in XYZ Regency (Zheng & Zheng, 2013).

Although Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE) and Presidential Regulation Number 132 of 2022 concerning Electronic-Based Government System Architecture have been issued, the preparation of government architecture in Indonesia still faces challenges due to the lack of clear and detailed guidance. This has the potential to cause confusion in implementation and interpretation in various government agencies (Rehman & Shamail, 2014).

In order for the implementation of SPBE to run better and consistently, a more detailed and comprehensive reference is needed as a derivative of the existing Presidential Regulation (Lnenicka & Komarkova, 2019). This guide is expected to cover technical and operational aspects, so that it can help each agency understand and implement the SPBE architecture in accordance with nationally set policies so that SPBE is achieved as a vehicle for digital transformation towards Indonesia 4.0 by 2040 (Janssen & Hjort-Madsen, 2017).

The problem identification was carried out by comparing the SPBE application architecture in XYZ Regency with the guidelines contained in Presidential Regulation No. 132 of 2022. In addition, an analysis of existing applications is carried out in XYZ Regency to find gaps and areas that need to be optimized to become more efficient (Janssen & Kuk, 2016).

This study aims to analyze the suitability of the SPBE architecture in XYZ District with the National SPBE architecture, identify gaps, and provide recommendations for optimizing the SPBE architecture in the application domain in XYZ District to be more efficient.

The results of this study are expected to help in providing recommendations for optimizing the SPBE architecture in the application architecture domain in XYZ Regency based on the National SPBE Framework and Application Architecture Targets. With optimization, it is hoped that the management of the application architecture will be more

controlled, application maintenance will be easier, budget management will be more optimal, and the public can access related service information through one integrated application.

Research Methods

This research will use literature research methods and comparative analysis. Data will be collected from official documents and related literature to analyze the implementation of the Electronic-Based Government System in XYZ Regency and study the suitability of the implementation of SPBE based on the guidance of Presidential Decree No. 95 of 2018 concerning Electronic-Based Government Systems and Presidential Decree No. 132 of 2022 concerning the Architecture of the National Electronic-Based Government System.

This research will begin by collecting official documents related to SPBE Architecture from the XYZ District Government as well as relevant literature and regulations on SPBE and Government Enterprise Architecture (GEA). After that, the SPBE document will be analyzed using thematic analysis techniques to gain an in-depth understanding of the implementation that has been carried out.

Furthermore, GEA regulations and literature will be reviewed to identify applicable guidelines and best practices. The results of the SPBE document analysis will then be compared with the guidelines contained in Presidential Decree No. 95 of 2018 and Presidential Decree No. 132 of 2022 to evaluate suitability, identify gaps and areas that need to be improved in the implementation of SPBE in XYZ Regency so that appropriate optimization recommendations can be given.

Results and Discussions

Phase B: Business Architecture

In the Business Architecture phase, business process activities that occur in XYZ Regency are described, including the relationship between entities in business processes including main business processes, supporting business processes, and management business processes (Hjort-Madsen & Pries-Heje, 2019).
Government To Government (G2G) *Business Process*

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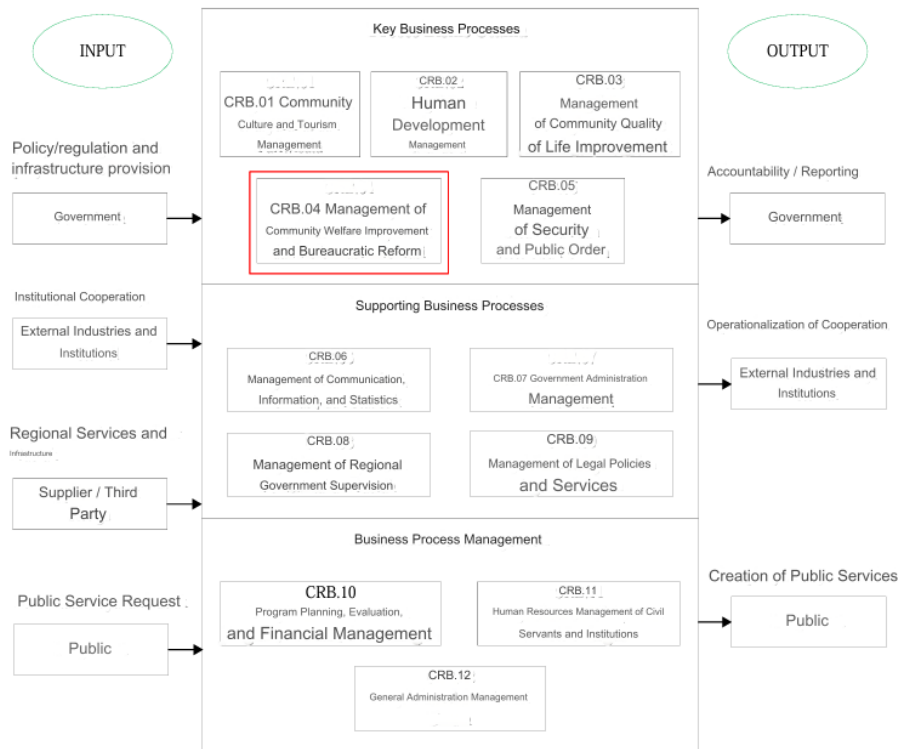


Figure 1 Government To Government (G2G) Business Process

Key Business Processes

The main business process is the core activity that is the main focus of the XYZ Regency Government to achieve the goals of government and public services. The main business processes consist of:

- CRB.01 Community Culture and Tourism Management
- CRB.02 Human Development Management
- CRB.03 Management of Improving the Quality of Community Life
- CRB.04 Management of Community Welfare Improvement and Bureaucratic Reform
- CRB.05 Security and Public Order Management

Supporting Business Processes

Supporting business processes are activities that support key business processes so that they can run effectively and efficiently.

Supporting business processes consist of:

- CRB.06 Communication, Information, and Statistics Management
- CRB.07 Government Administration Management
- CRB.08 Management of Local Government Supervision
- CRB.09 Management of Legal Policies and Services

Business Process Management

Business process management is an activity that manages internal resources to ensure an organization runs well and achieves its desired goals. The management business process consists of:

- CRB.10 Management of Program Planning, Evaluation, and Finance
- CRB.11 Apparatus and Institutional Human Resources Management
- CRB.12 General Administration Management

Inputs and Outputs

Inputs and outputs describe the resources that go into a business process and the results that result from that process.

Input:

- Government: Providing policies/regulations and providing infrastructure.
- Industry and External Institutions: Cooperate in operationalization.
- Supplier/Third Party: Providing regional services and infrastructure.
- Community: Request public services.

Output:

- Government: Accepts accountability/reports.
- Industries and External Institutions: Obtain the operationalization of cooperation.
- Community: Getting public services

Inter-unit relations

a. 1st to 3rd business process relationship map



Figure 2 Map of Business Process Relations 1st to 3rd

CRB.01 Community Culture and Tourism Management

This image also shows the agencies involved in the management of community culture and tourism:

- Department of Culture, Tourism, Youth and Sports
 - Duties and Functions: Managing activities related to culture, tourism, youth, and sports in XYZ Regency. Responsible for promoting tourism, developing local culture, and supporting youth and sports activities (Erizal et al., 2022).

CRB.02 Human Development Management

This figure also shows the agencies involved in the management of human development:

- Education Office
 - Duties and Functions: Responsible for the management of education in XYZ District, including primary, secondary, and other educational services.
- Health Office

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Duties and Functions: Manage health services for the community, including disease prevention, health promotion, and general health services.

- Social Service

Duties and Functions: Providing social services for the community, including social assistance, social welfare services, and social protection.

- Manpower and Transmigration Office

Duties and Functions: Manage employment and transmigration affairs, including job training, workforce placement, and transmigration programs.

- Regional Revenue Management Agency

Duties and Functions: Managing regional revenues from various sources, ensuring that tax and levy collection runs effectively.

- Department of Culture, Tourism, Youth and Sports

Duties and Functions: Involved in human development through cultural, tourism, youth, and sports activities.

CRB.03 Management of Improving the Quality of Community Life

This picture also shows the agencies involved in the management of improving the quality of life of the community (Arpandi & Affandi, 2024).

- Satpol PP (Pamong Praja Police Unit)

Duties and Functions: Maintain public order and public peace, enforce local regulations, and provide protection to the community.

- National Unity and Politics

Duties and Functions: Managing the affairs of national unity and politics, including maintaining political stability, promoting harmony between community groups, and managing relations between the government and the community (Rozas et al., 2020).

b. 4th to 5th business process relationship map

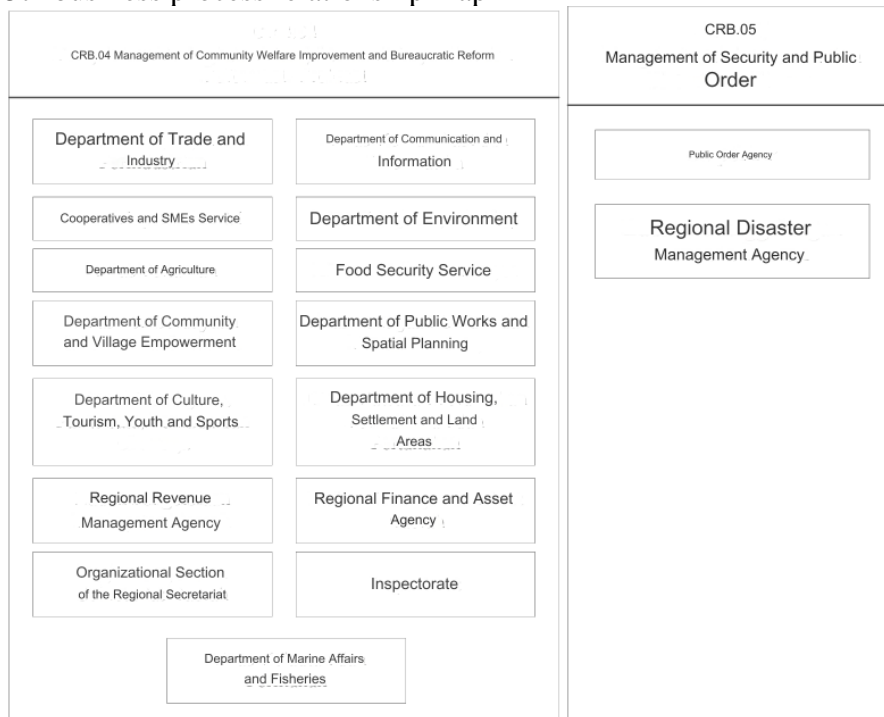


Figure 3 4th to 5th Business Process Relationship Map

CRB.04 Management of Community Welfare Improvement and Bureaucratic Reform

This figure shows several agencies and agencies related to the management of improving community welfare and bureaucratic reform.

The following are the agencies involved:

- Trade and Industry Office
Duties and Functions: Managing trade and industrial affairs in XYZ District, supporting the development of the local economy.
- SME Cooperative Office
Duties and Functions: Manage and support small and medium enterprises (SMEs) and cooperatives to improve the economic welfare of the community.
- Agriculture Service
Duties and Functions: Manage the agricultural sector, including programs that support farmers and food production.
- Community and Village Empowerment Office
Duties and Functions: Managing programs that empower communities and villages to improve social and economic welfare.
- Department of Culture, Tourism, Youth and Sports
Duties and Functions: Managing cultural, tourism, youth, and sports affairs to support social and economic development.
- Regional Revenue Management Agency
Duties and Functions: Manage regional revenues to ensure sufficient funding for government programs.
- Regional Secretariat Organization Section
Duties and Functions: Managing organizational and bureaucratic reforms to improve the efficiency and effectiveness of government.
- Marine and Fisheries Service
Duties and Functions: Manage marine and fishery resources to support the local economy and community welfare.
- Communication and Information Service
Duties and Functions: Managing communication and informatics, including ICT infrastructure to support more efficient public services and government.
- Environment Agency
Duties and Functions: Managing environmental affairs, including programs that support environmental sustainability.
- Food Security Service
Duties and Functions: Manage food security affairs to ensure food availability and safety for the community.
- Public Works and Spatial Planning Office
Duties and Functions: Managing infrastructure and spatial planning to support planned and structured regional development.
- Residential Areas and Land Service
Duties and Functions: Manage housing, settlements, and land affairs to support the housing needs of the community.
- Regional Finance and Assets Agency
Duties and Functions: Manage regional finances and assets to ensure effective and efficient use of resources.
- Inspectorate

Duties and Functions: Oversee and audit government performance to ensure transparency and accountability.

CRB.05 Security and Public Order Management

This image also shows the agencies involved in the management of security and public order:

- Satpol PP (Pamong Praja Police Unit)
Duties and Functions: Maintain public order and public peace, enforce local regulations, and provide protection to the community.
- Regional Disaster Management Agency
Duties and Functions: Manage disaster management to protect the community from the risk of natural and man-made disasters.

c. Map of business process relationships from 6th to 8th

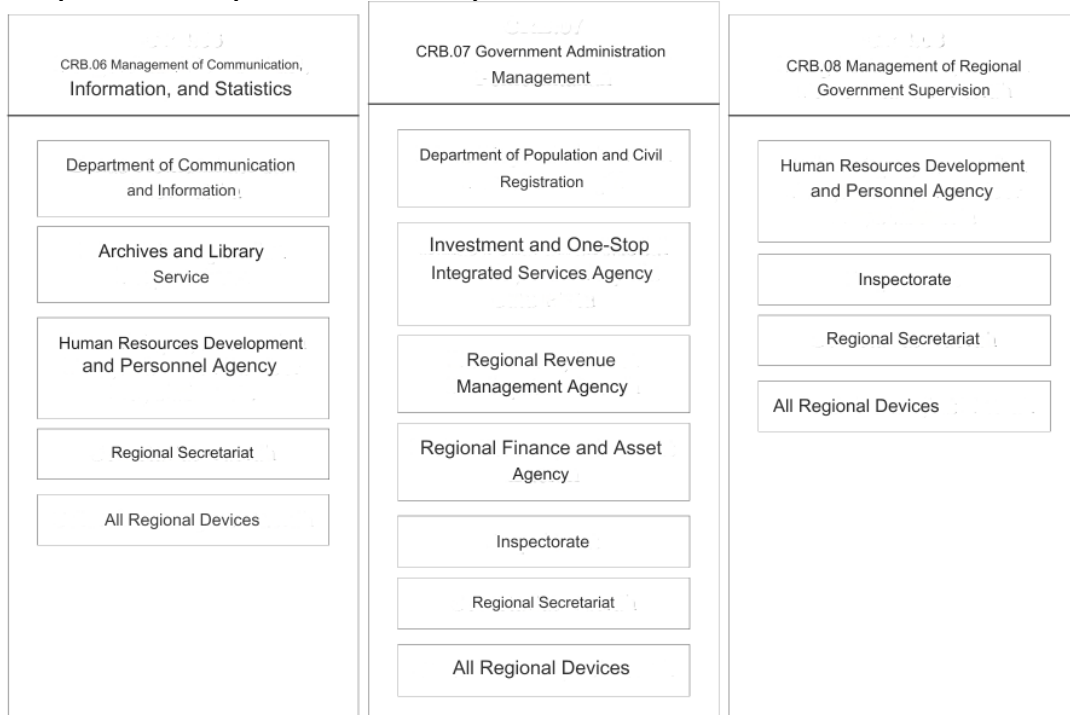


Figure 4 Map of Business Process Relations 6th to 8th

CRB.06 Communication, Information, and Statistics Management

This figure shows several agencies and agencies involved in the management of communication, information, and statistics (Yeni et al., 2023). The following are the agencies involved:

- Communication and Information Service
Duties and Functions: Manage communication and information technology, including ICT infrastructure, communication services, and statistical data processing.
- Archives and Library Service
Duties and Functions: Managing archives and regional libraries, ensuring accessibility and management of public information.
- Personnel and Human Resource Development Agency
Duties and Functions: Manage staffing and HR development, including employee training, recruitment, and career development.
- Regional Secretariat

Duties and Functions: Supporting administration and coordination between regional apparatus, ensuring the smooth operation of the government.

- All Regional Apparatus

Duties and Functions: Plays a role in the collection and management of communication data, information, and statistics necessary for planning and decision-making.

CRB.07 Government Administration Management

This image shows the agencies involved in the management of government administration. The following are the agencies involved:

- Population and Civil Registration Office

Duties and Functions: Manage population administration and civil registration, including population registration and recording of important events such as births, deaths, and marriages.

- One-Stop Investment and Integrated Services Office

Duties and Functions: Manage investments and provide one-stop integrated services for licensing and investment.

- Regional Revenue Management Agency

Duties and Functions: Manage regional revenue, including tax collection and levies.

- Regional Finance and Assets Agency

Duties and Functions: Manage regional finances and assets, ensuring efficient and transparent management.

- Inspectorate

Duties and Functions: Oversee and audit government performance to ensure compliance with applicable regulations and standards.

- Regional Secretariat

Duties and Functions: Supporting administration and coordination between regional apparatus, ensuring the smooth operation of the government.

- All Regional Apparatus

Duties and Functions: Playing a role in the implementation of government administration, ensuring that public services run properly and effectively.

CRB.08 Management of Local Government Supervision

This image shows the agencies involved in the management of local government supervision. The following are the agencies involved:

- Personnel and Human Resource Development Agency

Duties and Functions: Manage staffing and human resource development, including supervising employee performance and career development.

- Inspectorate

Duties and Functions: Supervise and audit government performance to ensure compliance with applicable regulations and standards, as well as provide recommendations for improvement.

- Regional Secretariat

Duties and Functions: Supporting administration and coordination between regional apparatus, ensuring the smooth operation of the government.

- All Regional Apparatus

Duties and Functions: Plays a role in internal and external supervision to ensure that all government activities are carried out in accordance with applicable policies and regulations.

Conclusion

From the analysis conducted on 32 applications in XYZ Regency, as listed on the official website of the regency, several duplications were identified. These include two duplications in social services applications, two in complaint services applications, two in licensing field applications, six in public service applications, and six in internal government applications. Through optimization and simplification, the total number of applications can be reduced from 32 to 21.

Based on the Target and Actual SPBE Application Architecture for XYZ District, the applications were categorized according to their functions. It was found that five groups of applications are functioning well, six groups are available but not working as intended, and two groups of applications are yet to be developed.

To address these issues, the strategic optimization plan outlines several steps. First, further development and integration will be conducted on applications that are functioning well. Second, duplicate applications will be merged based on their similarities. Third, applications that are available but not operating as intended will undergo reactivation and development. Finally, new applications will be built to cover areas where applications are currently unavailable.

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