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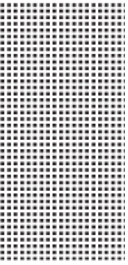
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Publication List

1	All Units of the State's Administrative Apparatus
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Introduction

The Electronic Systems Integration Policy for the Units of the State's Administrative Apparatus is a policy that aims to harmonize systems in the Governmental Digital infrastructure by setting guidelines for the integration of electronic systems to ensure compatibility of different governmental systems (interoperability), enhance efficiency, reduce duplication of efforts, and improve the provision of services to beneficiaries.

Definitions and Terms

Ministry: The Ministry of Transport, Communications and Information Technology

Units of the State's Administrative Apparatus: Defined according to Royal Decree No. 75/2020 regarding the State's Administrative Apparatus.

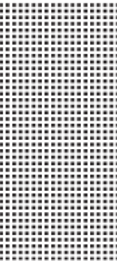
Government Integration Platform: The System created by the Ministry to exchange data between the State's Administrative Apparatus.

Electronic Systems Integration: A set of principles and guidelines that govern the data management and sharing via different electronic systems or databases.

Central Electronic Systems: Systems created by Units with the aim of integrating all data and processes in one center, such as the Human Resources System, the Financial System and other central systems that serve all units in general.

Application Programming Interface (API): A set of protocols, tools, and functions that allow programs and applications to communicate and interact with each other as it acts as a bridge to exchange data and information between two different applications or systems.

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Objectives

This policy aims to achieve a number of objectives including:

1. Achieving the objectives of the Government's Digital Transformation Program
2. Enhancing integration between electronic systems used in the different government units to achieve compatibility.
3. Ensuring the exchange of data and information between different electronic systems in a safe and effective manner.
4. Employing modern technology to raise the working efficiency of the State's Administrative Apparatus.
5. Reducing time and cost required for integration and connection between government units.

Purpose

This Policy aims to regulate the governance of electronic systems integration in administrative government units.

Scope of Implementation

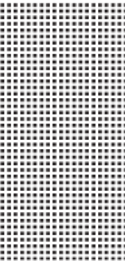
This policy applies to the Administrative Apparatus of the State.

Policy Statement

In order to achieve the objectives of this policy, Administrative government units should apply the following :

1. Providing and developing the digital infrastructure required to support the electronic integration.
2. Applying the standards specified by the Ministry for system integration (attached).
3. Including the feature of electronic integration through the Application Programming Interface (API) in the scope of work during any new investment in digital platforms and external electronic systems.
4. Start making modifications to its current electronic systems and digital platforms by making them integrated.
5. Adopting the Application Programming Interface (API) as a preferred option as the preferred option for electronic integration of the unit's internal and external electronic systems and digital platforms.
6. Using the Government Integration Platform as a main channel for integration with the electronic systems of other units.
7. Providing ready-to-use Application Programming Interfaces (APIs) for its electronic systems and external digital platforms on the government integration platform.

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8. Ensuring the provision and availability of the Application Programming Interface (API) on the government integration platform for the central electronic systems that it supervises.
9. Achieving the technical requirements and security standards issued by the ministry and the Electronic Defense Center when integrating electronic systems.
10. Implementing mechanisms for auditing and monitoring to ensure security availability and data protection in electronic systems.
11. Periodically evaluating and monitoring the performance of electronic systems and their integration.

Policy Management

1. This policy is owned by the Ministry of Transport, Communications and Information Technology and will be subject to revision whenever necessary.
2. This policy shall be adopted as the date of its approval and circulation by the Ministry of Transport, Communications and Information Technology.

Policy Compliance

1. The Ministry of Transport, Communications and Information Technology is responsible of monitoring the compliance of the State's Administrative Apparatus units to the policy, and presenting the results of compliance and commitment to the Council of Ministers.

Relevant Publications:

- Systems Integration Management Policy- European Union (2019)
- Government Integration - United Kingdom (2014)
- Best Practices for Systems Integration - International Telecommunication Union - 2015
- National Data Strategy - National Statistics Center - 2022
- Institutional Design Framework for E-Government (Second Edition) - 2018
- System Integration Framework (Key Considerations and Challenges) - California Institute of Technology - 2014
- Systems Integration Theory and Fundamentals- Netherlands 2020
- System Integration Protocols, APIs, and Interoperability - Ohio State University - 2014

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Attachment Electronic Systems Integration Standards Document

1. Technical Standards

Technical standards include requirements related to the structure of electronic systems and the method of data exchange between them. Some of these standards are:

- Applying unified programming standards to ensure compatibility and smooth integration between systems.
- Using specific standards to exchange data and information: such as XML, JSON and SOAP Standards.
- Adhering to specified specifications for the structure of electronic systems, such as SOA and REST standards.
- Employing appropriate security technologies to protect data during exchange, including:
 - Using reliable security protocols like HTTPS to secure communications between systems.
 - Implementing strong authentication mechanisms and access management to prevent unauthorized access to data and resources.
 - Implementing monitoring, alerting, and reporting procedures to detect intrusions and security incidents.

1.1 List of technical standards used in the process of electronic systems integration:

- **Data and Information Exchange Standards:**
 - Extensible Markup Language (XML): An open-source universal encoding language used to describe and exchange data between systems.
 - JavaScript Object Notation (JSON): A lightweight encoding language used to describe and exchange data between systems.
 - Simple Object Access Protocol (SOAP): A communication protocol that allows independent applications to communicate with each other using XML to format the exchanged data between applications.
 - Electronic Data Interchange (EDI): A set of technical standards used for data and information exchange between business systems.

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- **Specifications of Electronic Systems Infrastructure:**

- Service-Oriented Architecture (SOA): An architectural style that focuses on building systems through a collection of independent services that can be reused.
- Representational State Transfer (REST): An architectural style used to create Application Programming Interfaces (APIs) for web applications.

- **Security Technologies:**

- HTTPS (Hypertext Transfer Protocol Secure): A secure variant of the Hypertext Transfer Protocol used to secure communications between systems.
- TLS (Transport Layer Security): A protocol used to establish encrypted connections between systems.
- Secure Sockets Layer (SSL): It is a predecessor protocol to TLS.

- **Caching**

- Using caching to enhance system performance and reduce the burden on APIs.

- **Testing and Error Management:**

- Designing a unified system for handling, logging, and efficiently recovering from errors.
- Providing detailed reports on errors and continuously improving their handling.
- Provision of separate and documented testing environments for integration testing between systems.

- **Performance Monitoring and Analysis:**

- Implementing monitoring and analysis tools to measure the performance of integrated systems and improve them as needed.

- **Other standards can be used according to specific integration requirements, such as using specific standards for data exchange in a particular field, such as medical or financial data exchange standards.**

1.2 Security and Technical Standards for Data Exchange across the Government Integration Platform

The following technical requirements are considered when joining the integration platform:

- **Data Provider Entity**

- The entity must be within the scope of the government network.
- Provision and securing of network protection devices according to ministry requirements
- Providing the required data as a software interface (SOAP) or (REST).

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- **Data Recipient Entity**
 - The entity must be within the scope of the government network.
 - Provision and securing of network protection devices according to Ministry requirements.
- **Entities Outside the Government Network:**
 - Providing an internet connection with a fixed IP address
 - Provision and securing of the internet connection according to ministry requirements.

2. Administrative Standards

Administrative standards include requirements related to planning and managing the process of electronic systems integration. Some of these standards are:

- Establishing a dedicated integration team responsible for managing the process and providing technical and administrative support.
- Identifying the requirements and objectives of the integration process.
- Developing a specific business plan for system integration and implementing it according to the planned schedule.
- Developing a business continuity plan.
- Conducting appropriate tests to verify the success of the integration process.
- Establishing a service level agreement that includes scheduled times and notification mechanisms for service updates, upgrades, or cessation.

3. **Documentation and Documents:**

- Providing comprehensive documents that illustrate how to use APIs and integration processes.
- Providing practical examples that demonstrate the use of APIs, including queries and expected data in responses.
- Regularly updating integration documents to address changes and improvements.

4. Regulatory Standards

Regulatory standards include requirements related to ensuring compliance with applicable laws and regulations, including:

- Ensuring the safety and security of data during exchange.
- Protecting privacy and user rights.
- Compliance with laws and regulations in the field of information technology issued by the ministry or relevant authority.

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