



STATE
INFORMATION
ARCHITECTURE

Polish State Information Architecture Roadshow

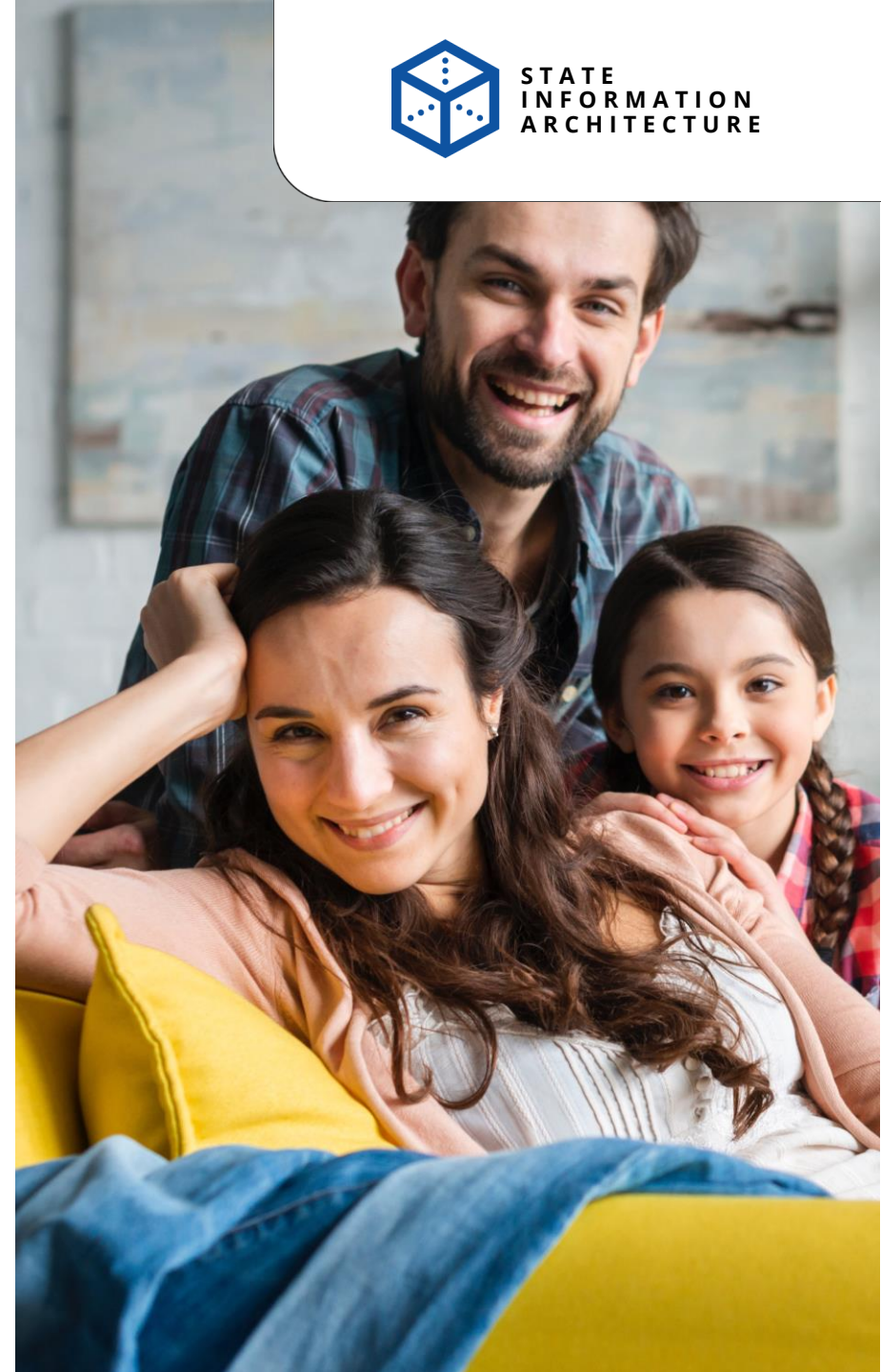
Michał Bukowski

MINISTRY OF DIGITAL AFFAIRS

22-11-2024

Digital government

Service delivery between government and the public - as well as within government - using information and communication technologies.



Digital government scope: supranational (e.g. EU), national, regional and local.

A map of Europe with a grid overlay. The European Union member states are highlighted in dark green. Three labels are overlaid on the map: 'EU' in a blue box with yellow text, 'Latvia' in a dark red box with white text, and 'Poland' in a red box with white text.

EU

Latvia

Poland

Digital government: challenges

- Lack of single cross-government vision of digital government: silo-based views.
- Lack of top-level ownership and effective cross-government decision-making.
- Failure to provide services with a real value to citizens.
- Lack of cooperation in creation and use of shared digital government services.
- Lack of required skills at all levels to implement the coherent digital government program.

... and more challenges

- Electronic services are provided by thousands of public organizations of varied digital maturity.
- A significant number of datasets is collected multiple times (duplicated) at central, regional and local level. It is not reused sufficiently, resulting in excessive data collection costs and information inconsistency.
- Lack of consistent identification of the state's information resources and the inability to assign reference status to public registers' data.



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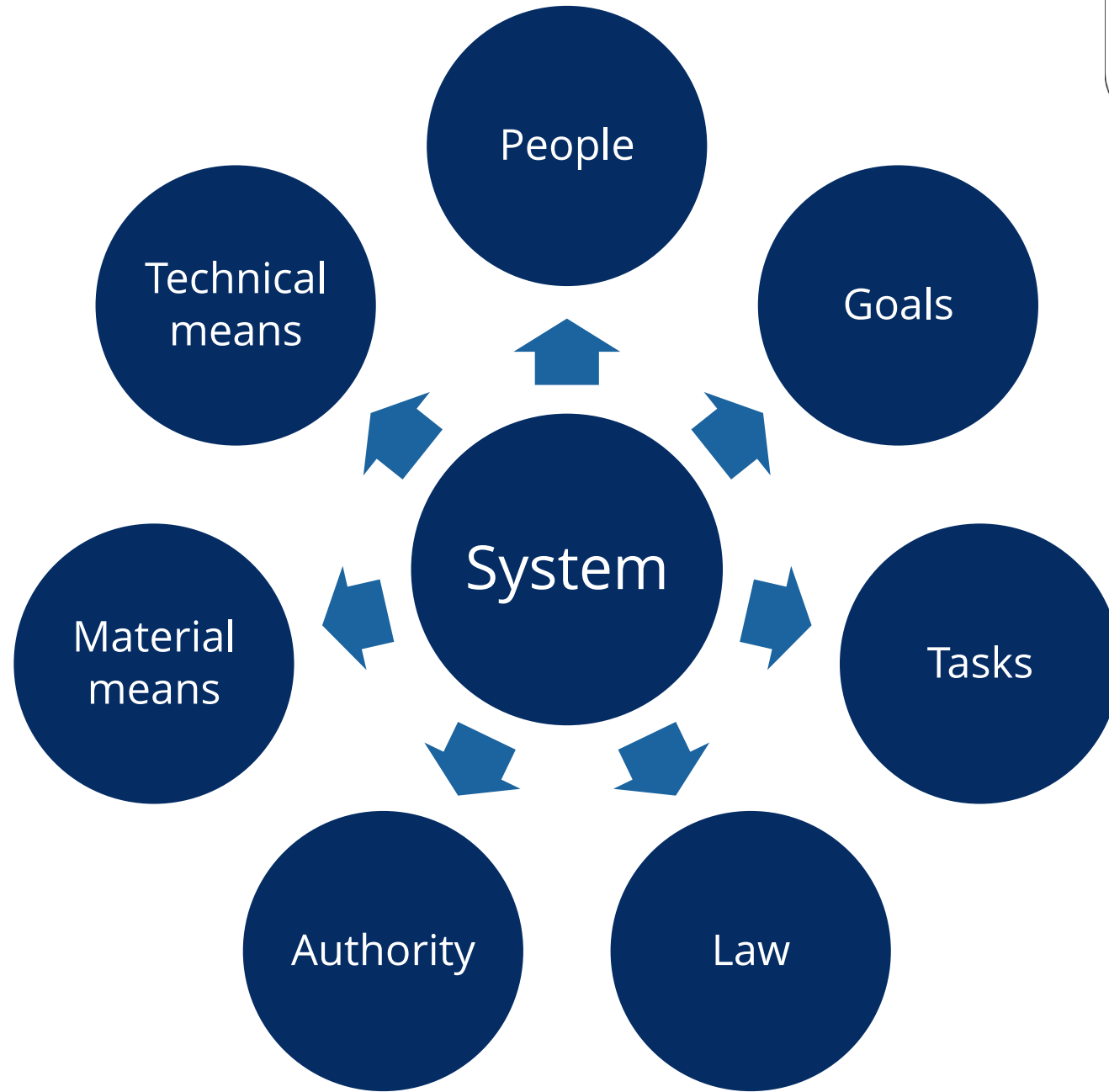
**Digital government is served by
public administration**

Public administration

„System

made up of people,
organized for the purpose of constant, systematic, future-
oriented **realization of the common good** as a public mission,
consisting mainly (though not exclusively) on the ongoing
implementation of laws,
equipped for this purpose with state authority
and material and technical means”.

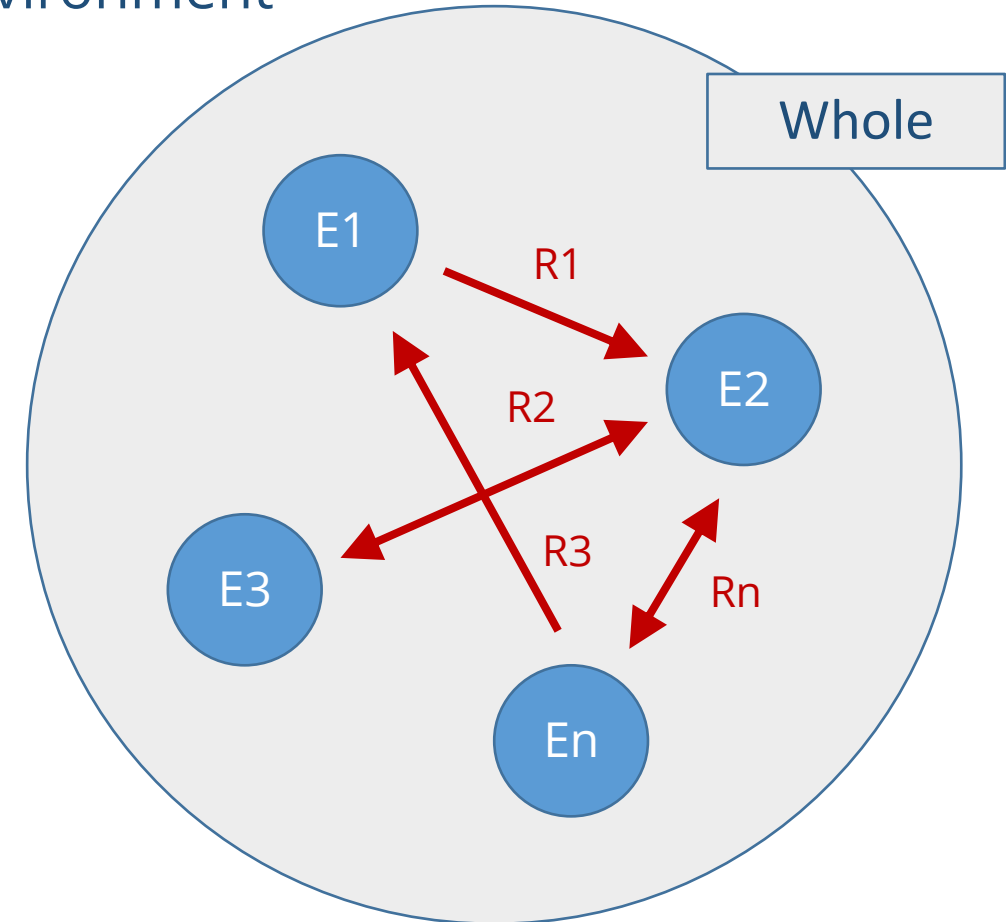
Public administration



System

„A **system** is a whole separated from the environment, composed of elements (subsystems) that are directly or indirectly related to each other.“

Environment



R. Ackoff

Systems thinking

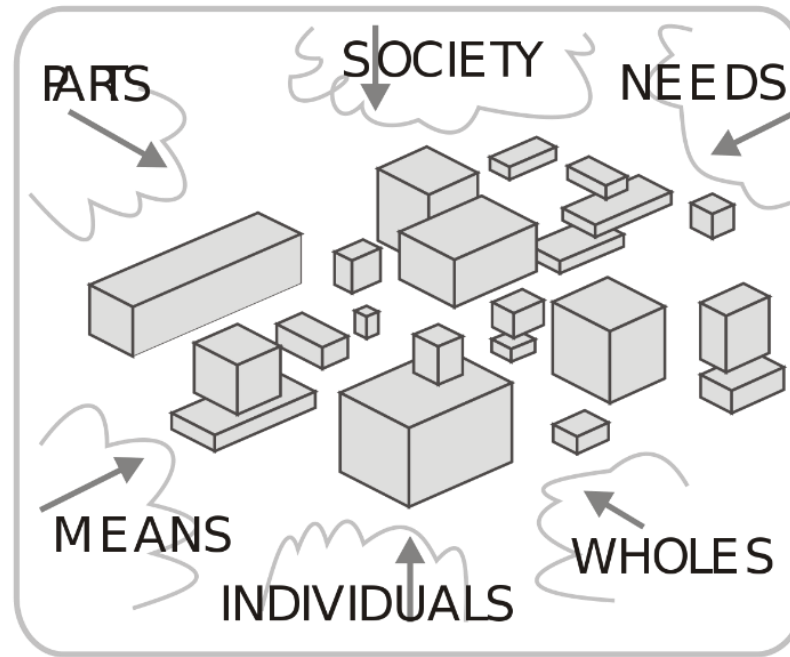
„Systems thinking is a way of

making sense of the complexity of the world

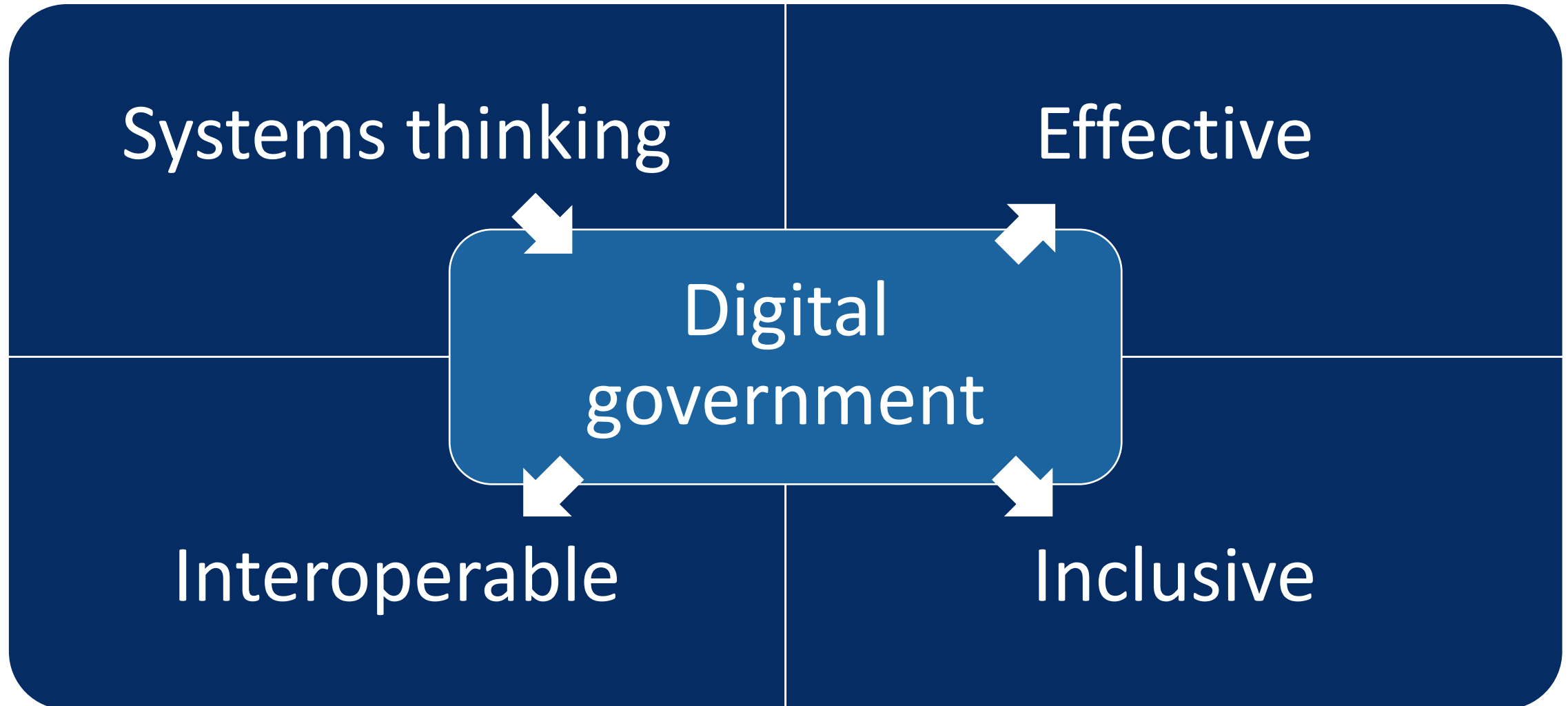
by looking at it in terms of wholes and relationships
rather than by splitting it down into its parts.”

M. Ramage and K. Shipp

Systems thinking



Systems thinking approach to the development of effective, interoperable and inclusive digital government



Effective

- Effective: able to reach the goals.
- + Efficient: long term benefits are greater than efforts (including costs).



Interoperable

Capable of effective co-operation: organizations, people, regulations, processes, data, applications, and infrastructure.



Inclusive

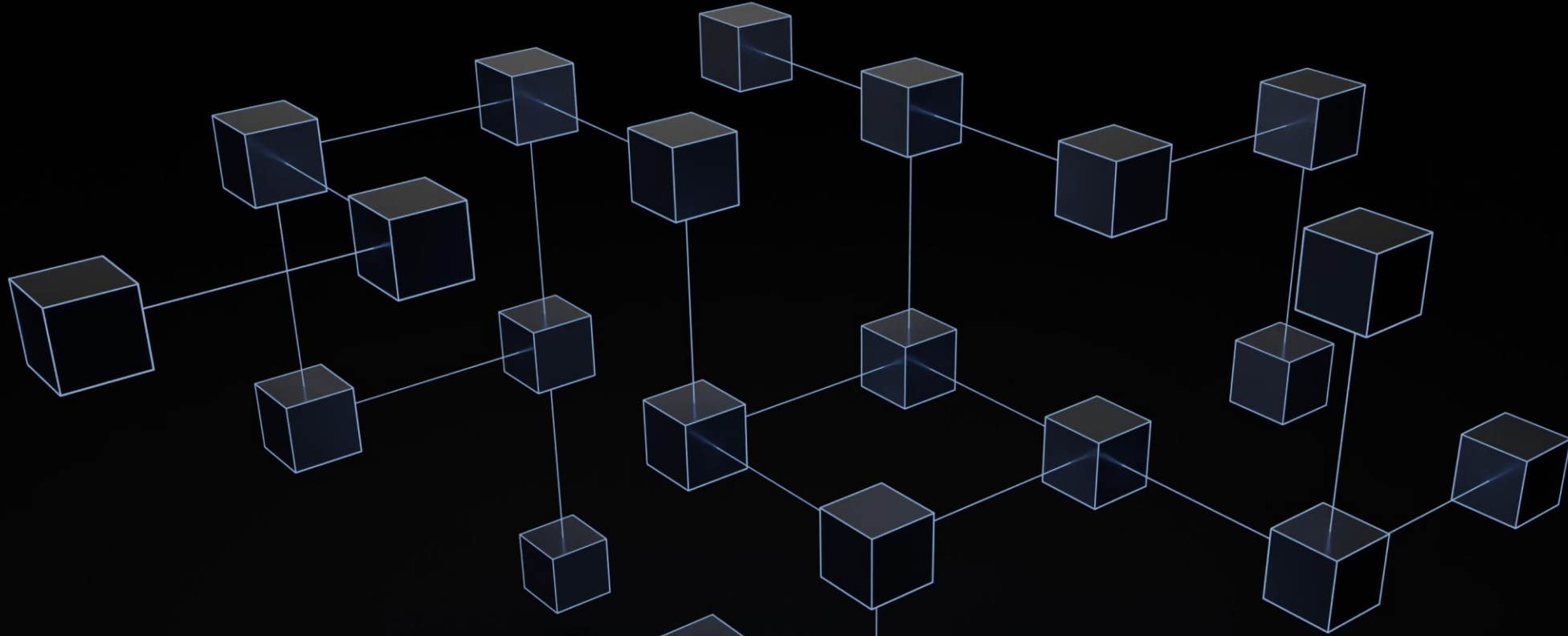
Providing equal opportunity for individuals and groups to participate.



Architecting the government

- Public administration is a complex system: cultural, legal, organizational, semantic, and technical aspects.
- The best way to **understand the system** and **address its challenges** is to use systems thinking methods.

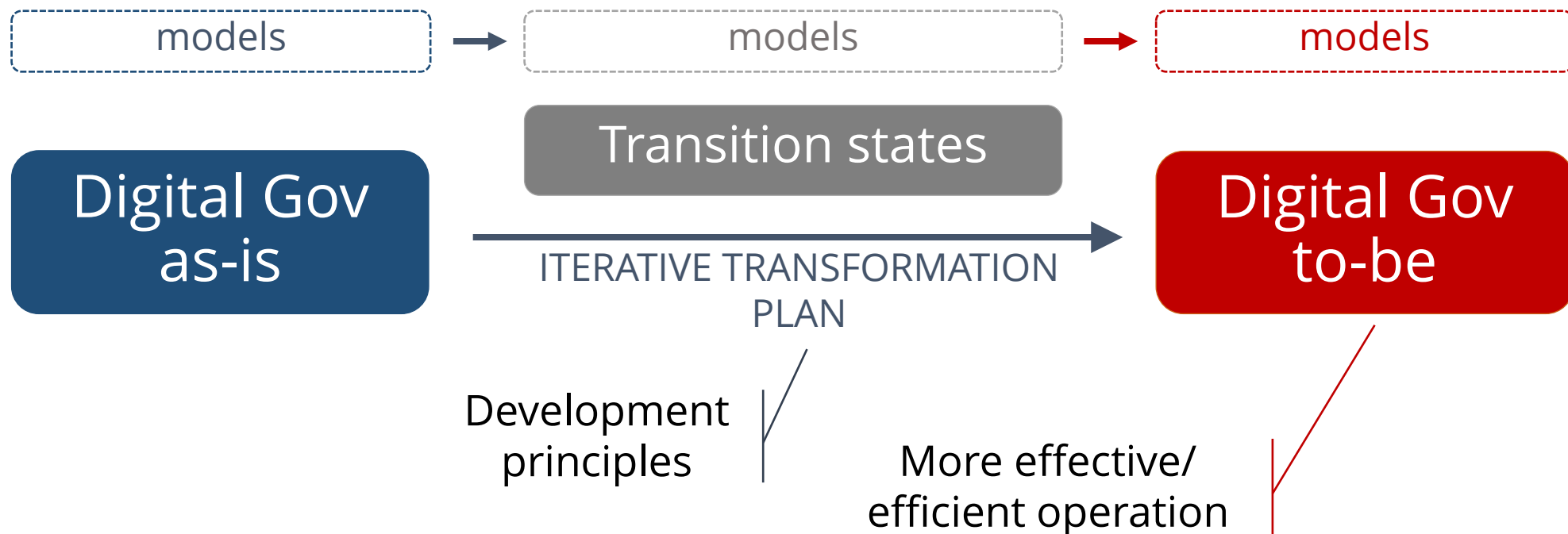
State Information Architecture



In Poland we use State Information Architecture
- **enterprise architecture** (systems thinking) approach to
public administration digital transformation.

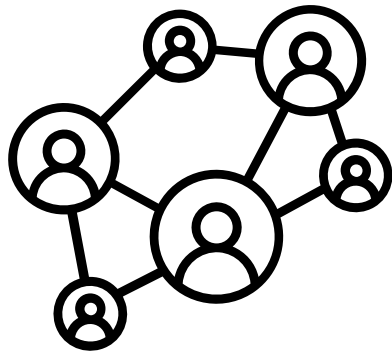
Digital government transformation

Comprehensive improvement in **quality of services** provided by public entities is possible due to **organizational transformation**.



Enterprise architecture

Enterprise architecture approach is required when the complexity of the organization is high, and the organization operates in a rapidly changing environment.



high complexity



rapidly changing
environment

State Information Architecture

Public administration

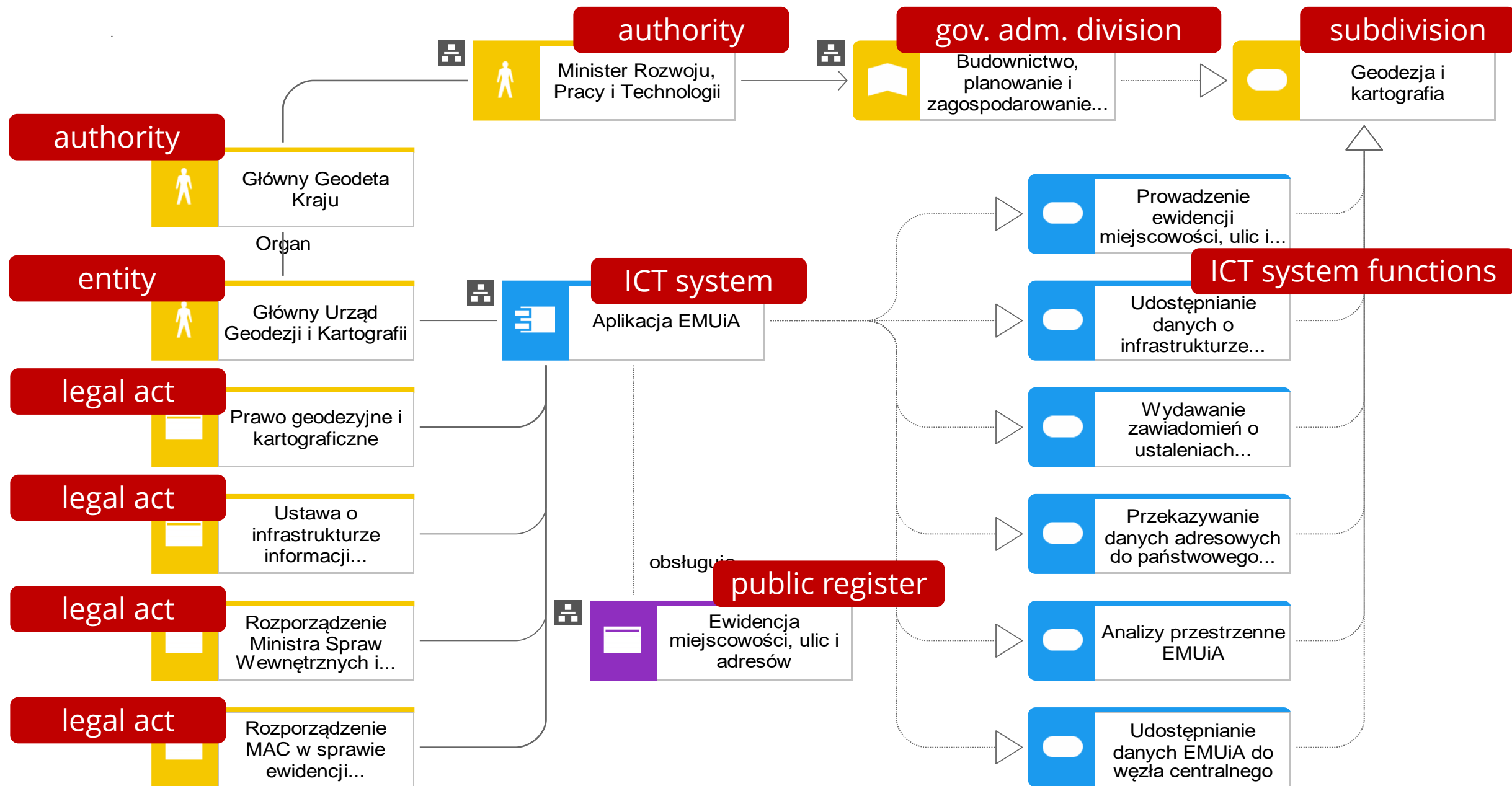
- **very high complexity**: complex structure of a very large number of entities,
- **moderate speed of changes**: due to the digitalization the environment changes quickly, while the law changes slowly.

State Information Architecture

uses principles and **visual models**, which reflect Polish public administration organization and development.



Example: ICT system co-operation model



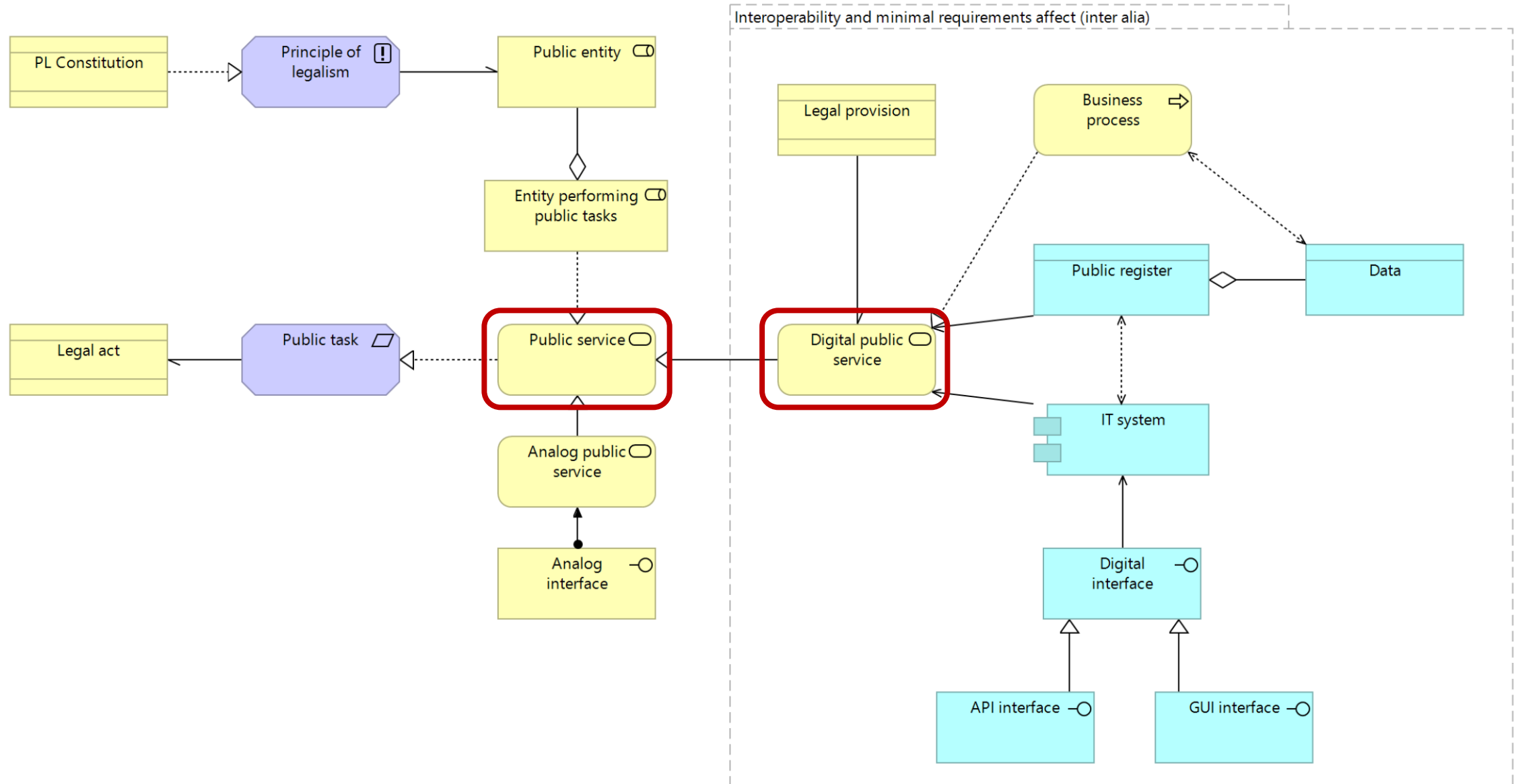
Principles and models

- Lead to better understanding of digital government, which allow further reduction of administration complexity.
- Contribute to increase in interoperability, re-use and effectiveness of whole system of public administration.

Ministry of Digital Affairs goals

- To create a coherent, logical and efficient state information system which provides high-quality digital services for citizens and entrepreneurs in a cost-effective way.
- To ensure the interoperability of existing and new ICT systems of public administration (including the elimination of duplicate functions).

PL National Interoperability Framework domain model

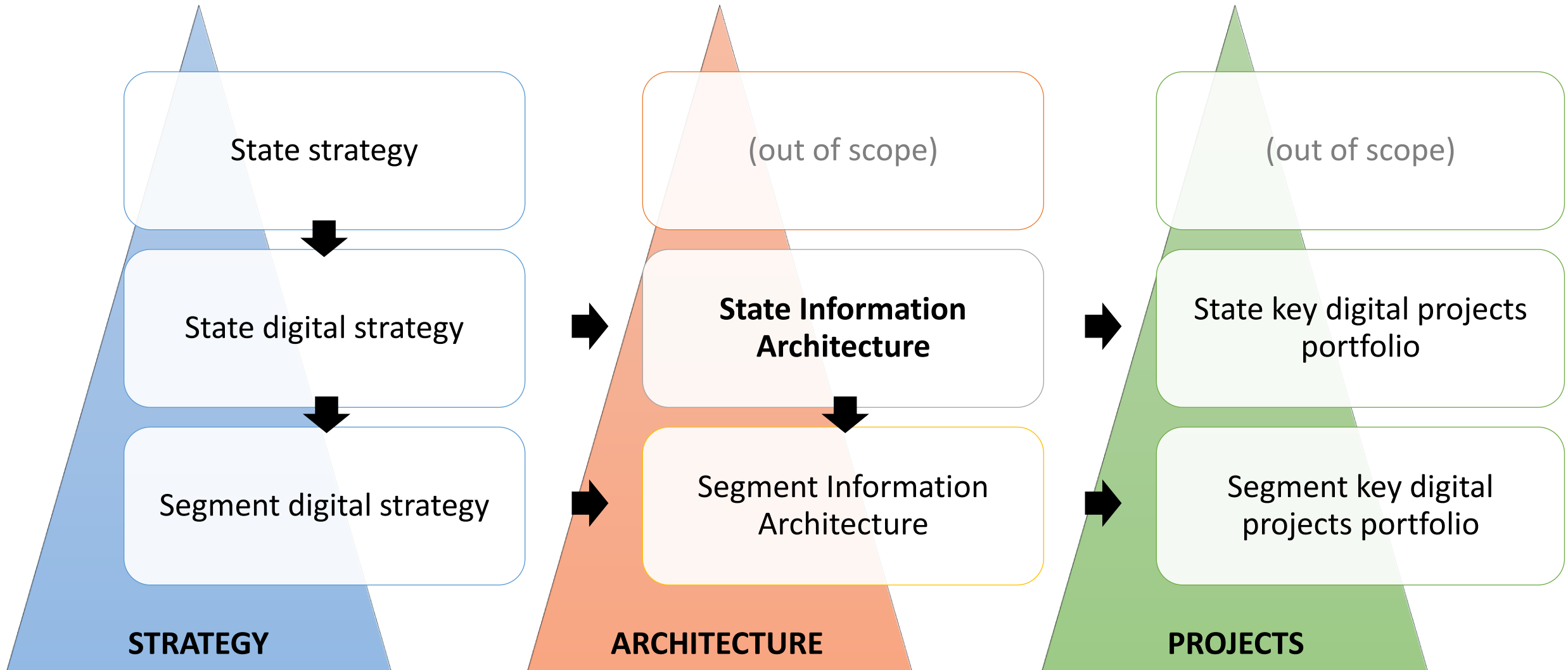


State Information Architecture

Definition

State Information Architecture – government digital transformation methodology, implementing the **objectives of the digital strategy**, based on architecture models, including principles, standards, guidelines and architecture recommendations.

Digital state: cascade



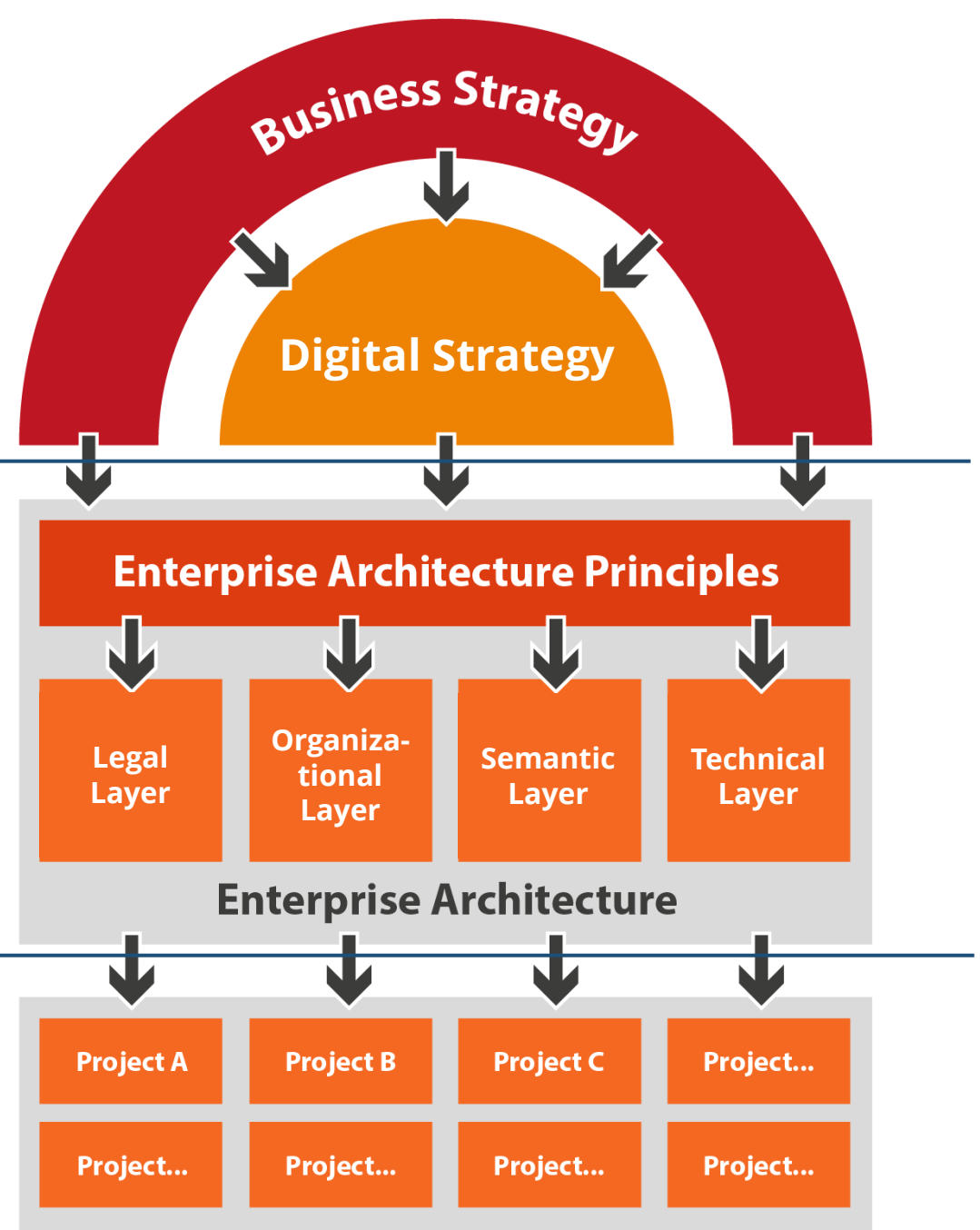
Strategy (objectives)



Enterprise architecture
(including principles)

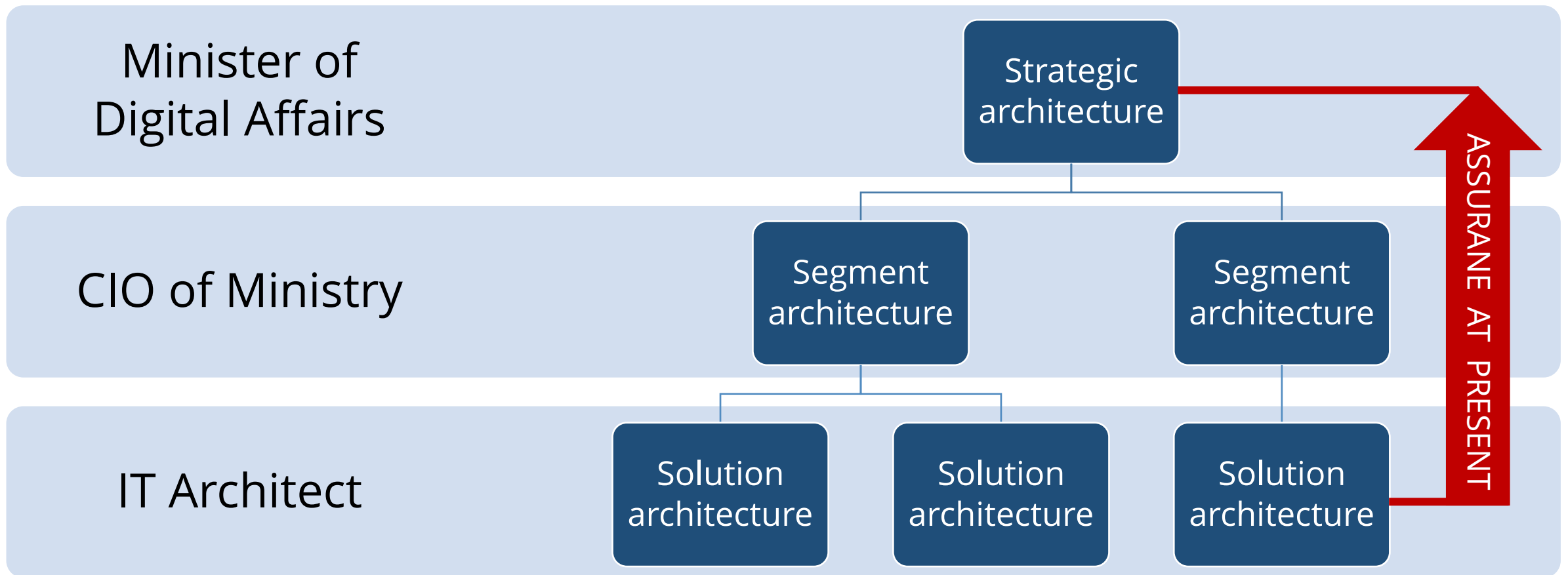


Project portfolio



State Information Architecture

Target enterprise architecture cascade:

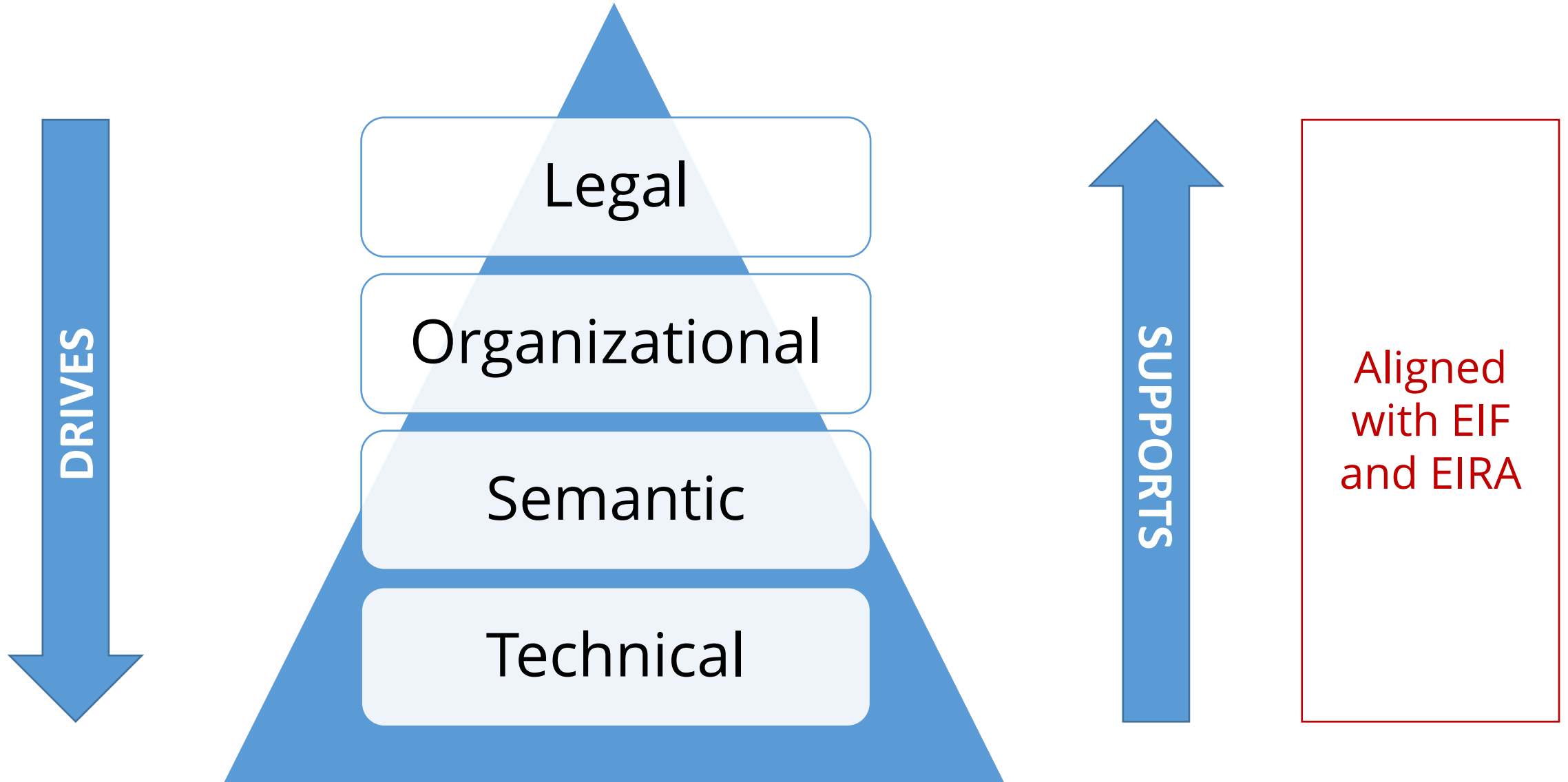




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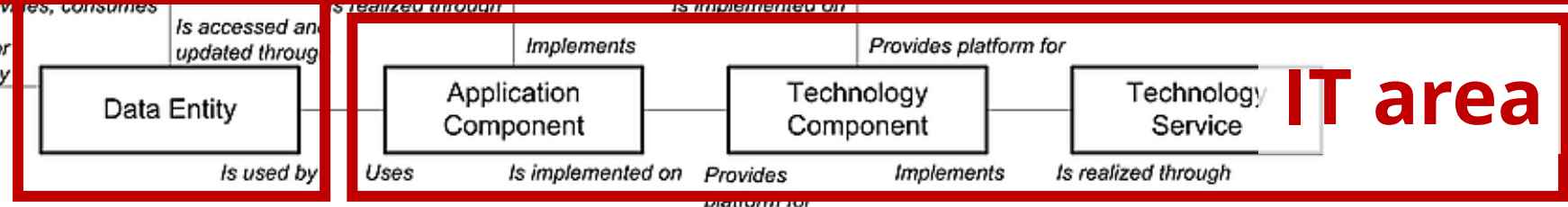
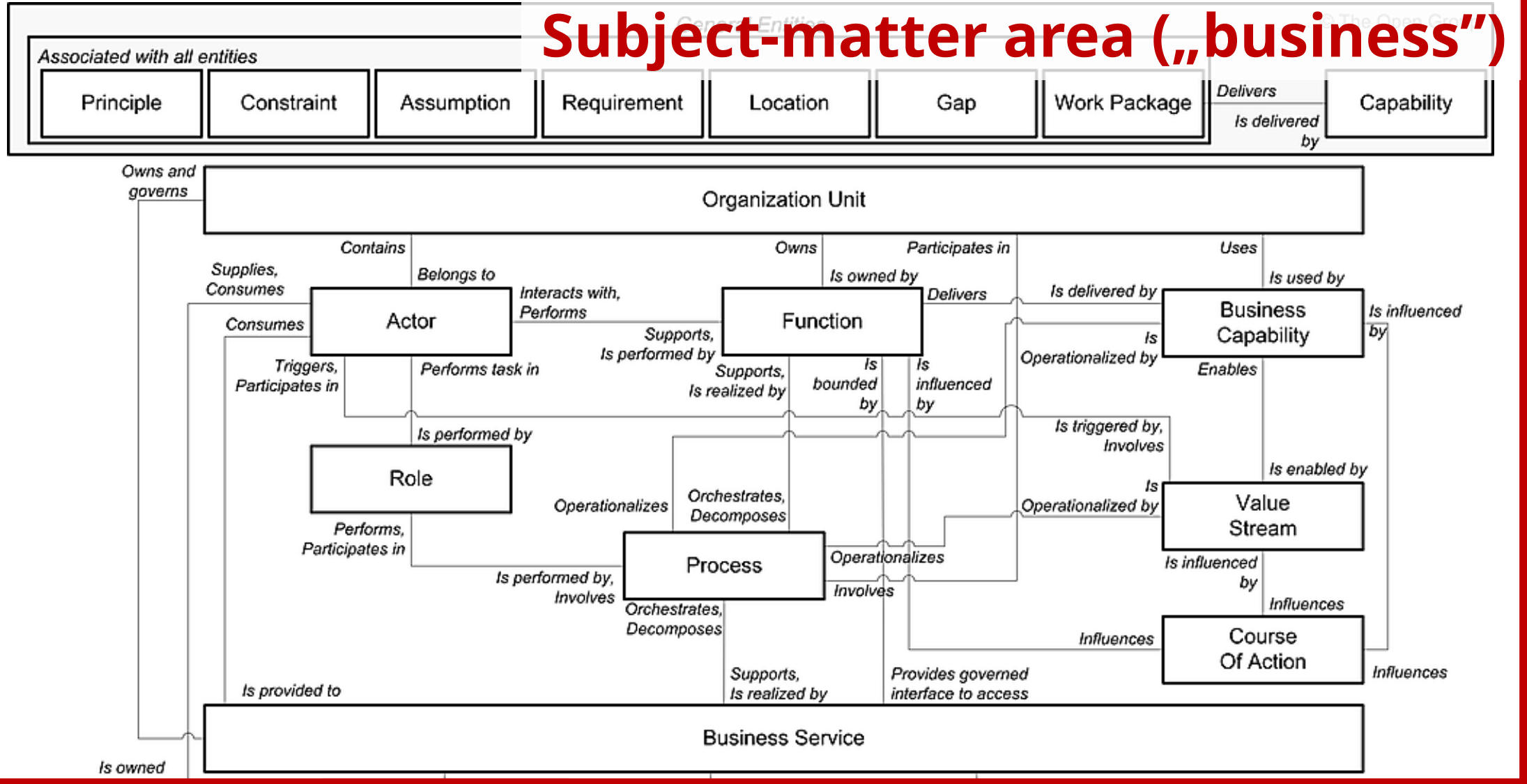
What is State Information Architecture about?

State Information Architecture layers



TOGAF metamodel

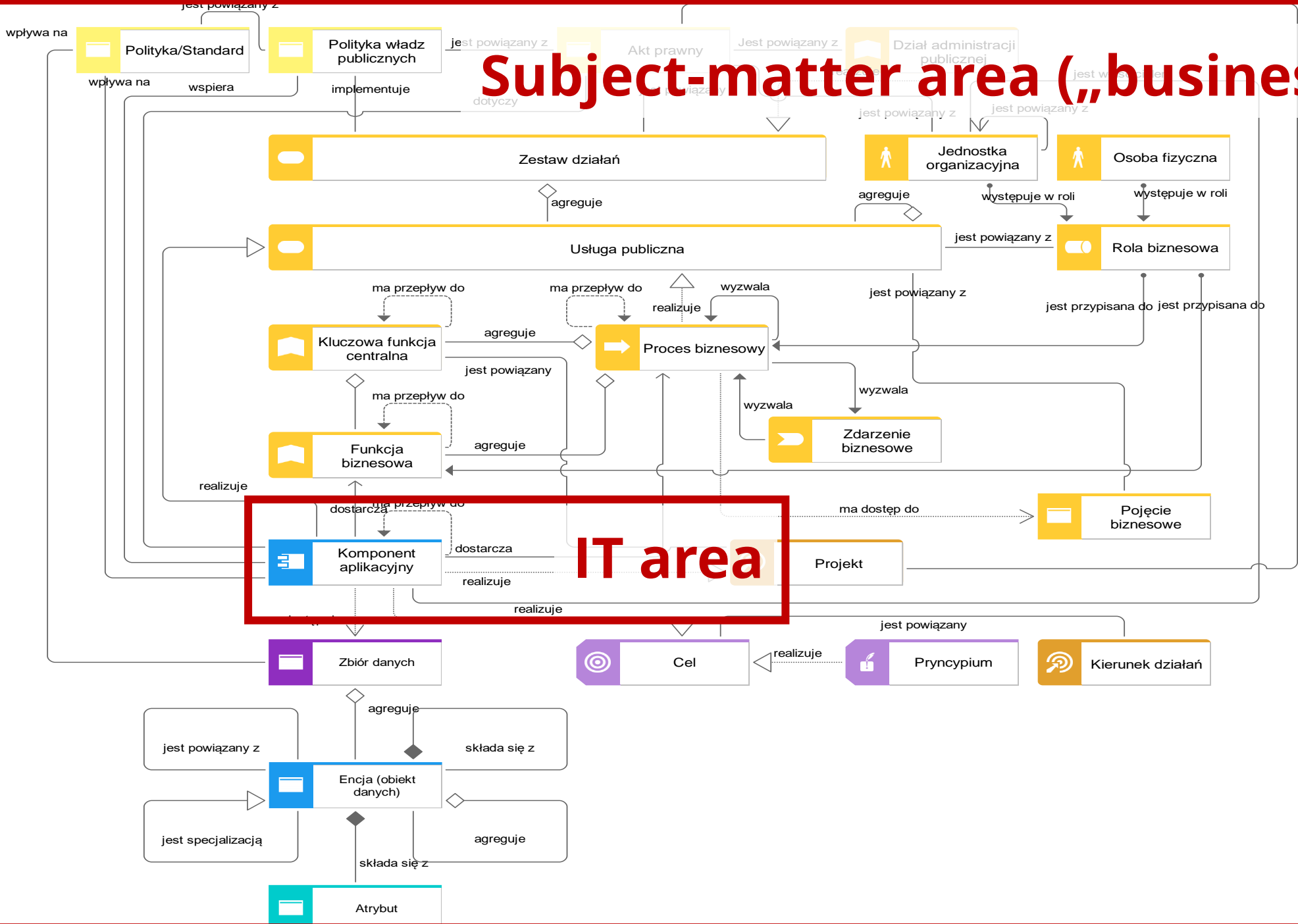
Subject-matter area („business“)



IT area

PL SIA metamodel

Subject-matter area („business“)



SIA functions



SIA functions

DEVELOPMENT

Development of architecture artifacts

- Development of SIA products: metamodel, model, vision, universal model for implementing e-services, method for building an interoperable IT system, cascade of architectures, etc.
- Improving artifacts by obtaining feedback from stakeholders (PDCA).

SIA functions

SUPPORT

Support for public entities in the use of SIA and building domain architectures

- Support for the Minister of Digital Affairs in the creation and operationalization of the Digital Strategy (SIA Vision -> Project portfolio).
- Support for public entities in planning, development and withdrawing public e-services - based on SIA artifacts from the SIA repository in architecture layers.

SIA functions

EDUCATION

Gaining/improving competences and sharing architectural knowledge

- Building awareness of the existence and benefits of SIA, as well as building the segment architecture in line with the strategic SIA.
- Mutual learning with the commercial environment where the architectural approach is applied.

SIA functions

ASSURANCE

Assuring the compliance of key public digital services with SIA artifacts

- Conducted for the entire life cycle of the public digital service.
- Self-control of SIA stakeholders based on the shared SIA artifacts (planned).

Interoperability and State Information Architecture Portal



Interoperacyjność to zdolność do współpracy

Współpraca publicznych systemów informatycznych ułatwia życie obywateli. Architektura Informacyjna Państwa wspiera całościowe zarządzanie rozwojem cyfrowego państwa.

CZYTAJ DALEJ



Architektura Informacyjna Państwa



Model realizacji e-usług



Lista rejestrów publicznych

Ważne informacje



Budowa interoperacyjnego systemu teleinformatycznego
Rekomendowane etapy planowania i budowy systemów IT przez podmioty publiczne



Roadmapa komponentów horyzontalnych
Plan budowy kluczowych publicznych systemów IT i rejestrów wraz ze wzajemnymi powiązaniem



Słownik pojęć
Pojęcia z obszaru Interoperacyjności i Architektury Informacyjnej Państwa



Bloki budowlane rozwiązań
Komponenty do wykorzystania w budowie publicznych systemów teleinformatycznych



W przygotowaniu
Plany rozwoju Portalu Interoperacyjności i Architektury



Newsletter
Zapisz się, aby otrzymać powiadomienia o rozwoju Portalu

Aktualności zobacz wszystkie



ARCHITEKTURA
INFORMACYJNA
PAŃSTWA

30.01.2021

Start Portalu Interoperacyjności i Architektury



30.01.2021

Forum Cyfrowej Administracji Publicznej

EIRA
EUROPEAN
INTEROPERABILITY
REFERENCE
ARCHITECTURE

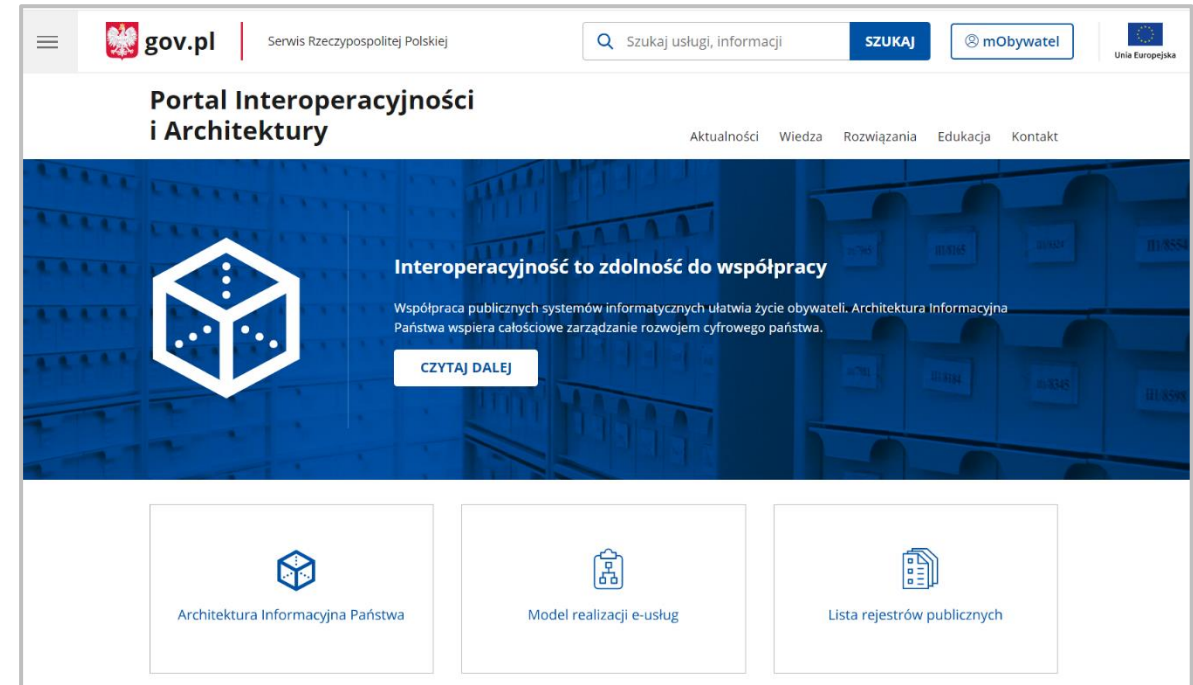
7.08.2020

Nowa wersja
Referen

Architektura informacyjna

Interoperability and architecture portal

- Launched in February 2021.
- **Purpose**
 - to increase the degree of regional, national and transeuropean **interoperability**,
 - ensure a widespread use of the **State Information Architecture**.



www.ia.gov.pl

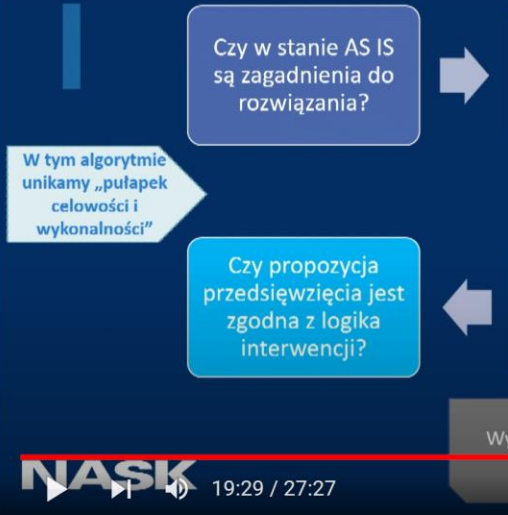
Interoperability and architecture portal

Information on:

- Strategies and programs, legislation, interoperability and architecture frameworks, standards and recommendations, and document structures, as well as on public IT systems and public registers.
- State Information Architecture, including its principles, vision, models and management processes.
- New videos and presentations on the State Information Architecture and interoperability are regularly published.

AIP jako model odniesienia

Definiowanie przedsięwzięcia z pomocą AIP



Architektura Informacyjna Państwa, prezentacja - cz. 2

Struktura zarządzania interoperacyjnością

Czy można opisać

Czy przedsięwzięcie

Komisja Europejska organ podejmujący kluczowe decyzje

Rada Interoperacyjnej merytoryczny organ wspierający inicjujący i koordynujący działania interoperacyjności

Wyznaczone organy krajowe koordynatorzy ds. interoperacyjności w instytucjach UE

32:50 / 48:00

Ministerstwo Cyfryzacji

Architektura Informacyjna Państwa, prezentacja - wstęp

Fazy Studium AIP

Faza I: informacyjna

Faza II: warsztatowa

Faza III: konsultacyjna

Ministerstwo Cyfryzacji

Architektura Informacyjna Państwa, prezentacja - wstęp

Fazy Studium AIP

- Przeprowadzenie cyklu wykładów / webinarów dla jednostek administracji nt. AIP
- Wylonienie jednostek zainteresowanych dalszą wspólną pracą nad praktycznym wdrożeniem i wykorzystaniem AIP w administracji publicznej (Faza II)

Faza I: informacyjna

- Przeprowadzenie zajęć warsztatowych nt. AIP dla zainteresowanych jednostek (w tym szkoleń VIP)
- Trzy grupy jednostek (w zależności od wiedzy / zainteresowania AIP)

Faza II: warsztatowa

- Asysta, konsultacje i wsparcie dla jednostek we wdrażaniu rozwiązań opartych na AIP
- Podpisanie porozumień z jednostkami
- Jednostki zainteresowane pogłębioną współpracą

Faza III: konsultacyjna

2:45 / 5:37

State Information Architecture Academy

State Information Architecture Academy

Academy focuses on the architectural approach and interoperability aspects of government information systems.

- **Mission:** To enhance the practical knowledge of government administration regarding the public information resources, for their **utilization in the digital transformation processes**.
- **Vision:** To achieve a **high level of digital maturity in the Polish administration**, consequently consolidating, standardizing, and improving the **efficiency of digital services**, as well as the quality of planning and implementation of public projects.

State Information Architecture Academy

More than 600 public servants has been trained online and onsite.




State Information Architecture Academy

All presentations and recordings are available online:

www.gov.pl/web/ia/studium-aip

The screenshot shows the website 'Portal Interoperacyjności i Architektury' with the following content:

- Header: gov.pl | Serwis Rzeczypospolitej Polskiej, Search bar: Szukaj usługi, informacji, SZUKAJ, Zaloguj
- Navigation: Aktualności, Wiedza, Rozwiązania, Nowe KRI, **Edukacja**, Kontakt
- Breadcrumbs: Portal Interoperacyjności i Architektury > Edukacja > Studium AIP
- Left sidebar menu:
 - Studium AIP
 - Architektura Informacyjna Państwa jako sposób na technosolucjonizm
 - Dane w Architekturze Informacyjnej Państwa, edycja 2
 - Prace legislacyjne w zakresie interoperacyjności i AIP
 - Nowe Krajowe Ramy Interoperacyjności - prace koncepcyjne
 - Projekty cyfrowej transformacji. Wsparcie we wdrażaniu Architektury Informacyjnej Państwa w administracji publicznej
 - Dane w Architekturze Informacyjnej Państwa. Do czego jest nam potrzebna architektura danych państwa?
- Main content:
 - ## Studium AIP
 - Celem przedsięwzięcia Studium AIP jest upowszechnienie wiedzy na temat zasobów informacyjnych Państwa opisanych w AIP i możliwości jej wykorzystania przy budowie nowych i optymalizacji istniejących rozwiązań teleinformatycznych administracji. I Edycja szkoleń skierowana jest do administracji rządowej.
 - Zachęcamy do zapoznania się z materiałem filmowym oraz prezentacjami wygłoszonym podczas:
 - [I Fazy szkoleń Studium-AIP](#)
 - [II Fazy szkoleń Studium-AIP](#)
 - 

Screen z filmu prezentacja Czym jest Studium AIP

Interoperability: an introductory course

First European Commission and Polish joint educational venture.
[Course published](#) on the official civil service e-learning platform.





STATE
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Polish State Information Architecture: past and present

SIA: past and present

before 2014:
humble beginnings

2017-2024:
reaching maturity

2014-2016:
preliminary phase

2025+: looking for
the future

eGov Portal Development
Vision: Government
Enterprise Architecture as a
prerequisite for an effective
and efficient digital state
development

- Stakeholder identification and analysis
- Communication based on stakeholder analysis
- Government EA visual identification
- Government enterprise architecture **principles**: developed during co-creation process
- Government enterprise **architecture vision**: prototype

- EA repository
- Architecture vision
- Architecture metamodel
- Architecture governance processes
- LOST-layers **models** for public IT systems and public registers, incl. cooperation and data flow models
- Reference data models
- SIA assurance process
- Interoperability and State Information Architecture Portal
- SIA Study

- SIA one of the pillars of state digital transformation
- Hard law SIA conformance requirements
- SIA in support for cross-border and national interoperability assessments

**Polish regulations on
State Information Architecture
and interoperability**

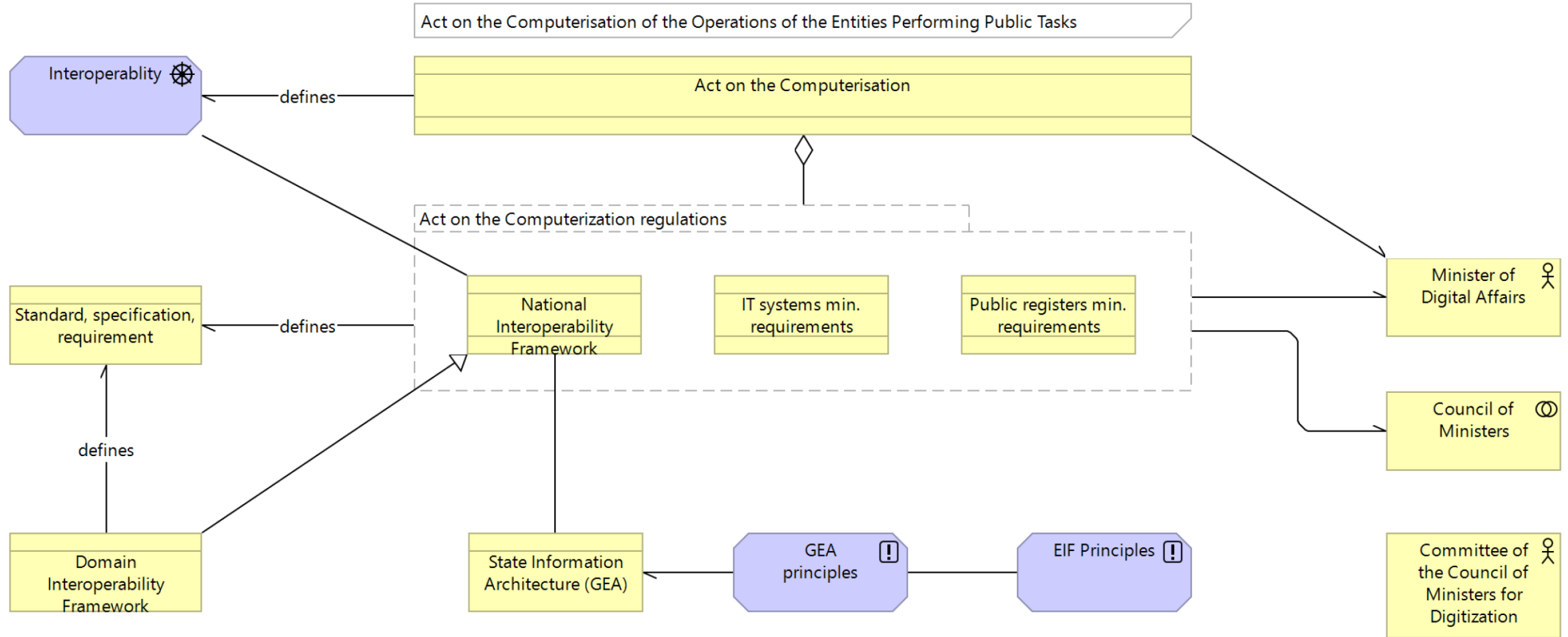
PL regulations: present



Digital Strategy

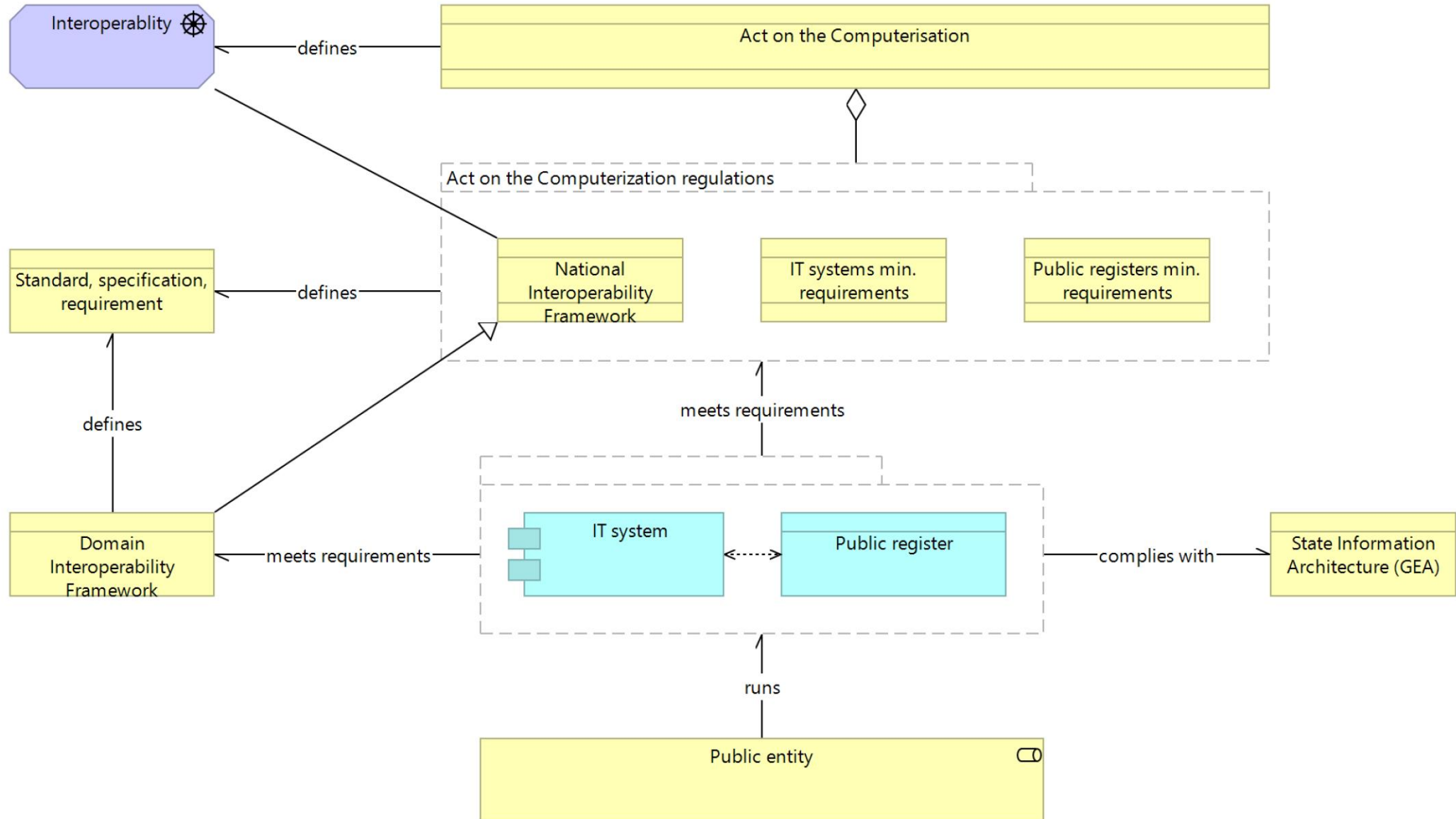
- First State Information Architecture definition.
- Basis for architecture principles, as-is and to-be architecture models to be used in government digital transformation.
- Architecture assurance process by Committee of the Council of Ministers on Digitization.
- Basis for central government Public IT Systems and Public Registers Inventory.

PL regulations: present



The Regulation on the National Interoperability Framework, minimum requirements for public registers and information exchange in electronic form, and minimum requirements for ICT systems, adopted on 12 April 2012 by the Council of Ministers, was further amended in 2014, 2016 and 2017.

PL NIF: systems, registers and entities



PL NIF: conformance



Each entity performing public tasks
must adapt its IT systems and registers
so that they meet the minimum requirements
specified in Polish National Interoperability Framework.

PL NIF: key aspects



- Interoperability: organizational, semantic & technical.
- Guiding principle: technology neutrality.
- IT systems architecture: incl. SOA, web-services, encryption protocols for data interchange.
- IT systems minimal requirements, incl. information security, file formats, digital signature formats.
- Public registers minimal requirements, including structures of reference data objects.

PL regulations: present



Internal Ministry of Digital Affairs regulations

- Project management methodology: project charter is verified against State Information Architecture.

IT Projects assessments



Enterprise Architecture Board assesses IT projects descriptions:

- for compliance with **State Information Architecture,**
- against **Polish National Interoperability Framework requirements.**



Compliance with the State Information Architecture

... supports **re-use of existing e-government solutions** and design in accordance with the government enterprise architecture vision.

Strategies & legislation drafts



Policymakers also receive **opinions on the drafts of their digital strategies or legal acts drafts**, which are verified for compliance with State Information Architecture.

PL regulations: drafts



New Digital Strategy

- State Information Architecture as a one of the pillars of state digital transformation.

PL regulations: drafts



New act on the Computerisation of the Operations of the Entities Performing Public Tasks:

- Basis for State Information Architecture preparation and development.
- New SIA definition.
- Public IT systems and public registers must conform to SIA principles, standards, and recommendations.
- Public IT systems share data via API.

PL regulations: drafts



New regulation on the National Interoperability Framework, minimum requirements for public registers, and minimum requirements for ICT systems and data exchange in electronic form – additions:

- National interoperability assessments.
- API requirement for central government public registers.
- Public register's single point of contact.
- API standard: default REST, SOAP supplementary.

PL regulations: drafts



The Regulation on the Interoperability Repository

- Register of public registers.
- Public registers metadata.
- Information about public IT systems APIs.
- National interoperability assessment reports.
- Cross-border interoperability assessment reports.
- Reports on interoperability standards and specification peruse.



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Thank you!

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