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# Data in the State Information Architecture

What we need a state data architecture for?

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# Agenda

- What is the data architecture in the State Information Architecture (AIP)?
- The goals of state data architecture
- State data architecture activities - the method and scope
- Basic principles of state data architecture
- Products - examples of state data architecture models and recommendations
- The concept of reference registries and reference data sharing mechanisms

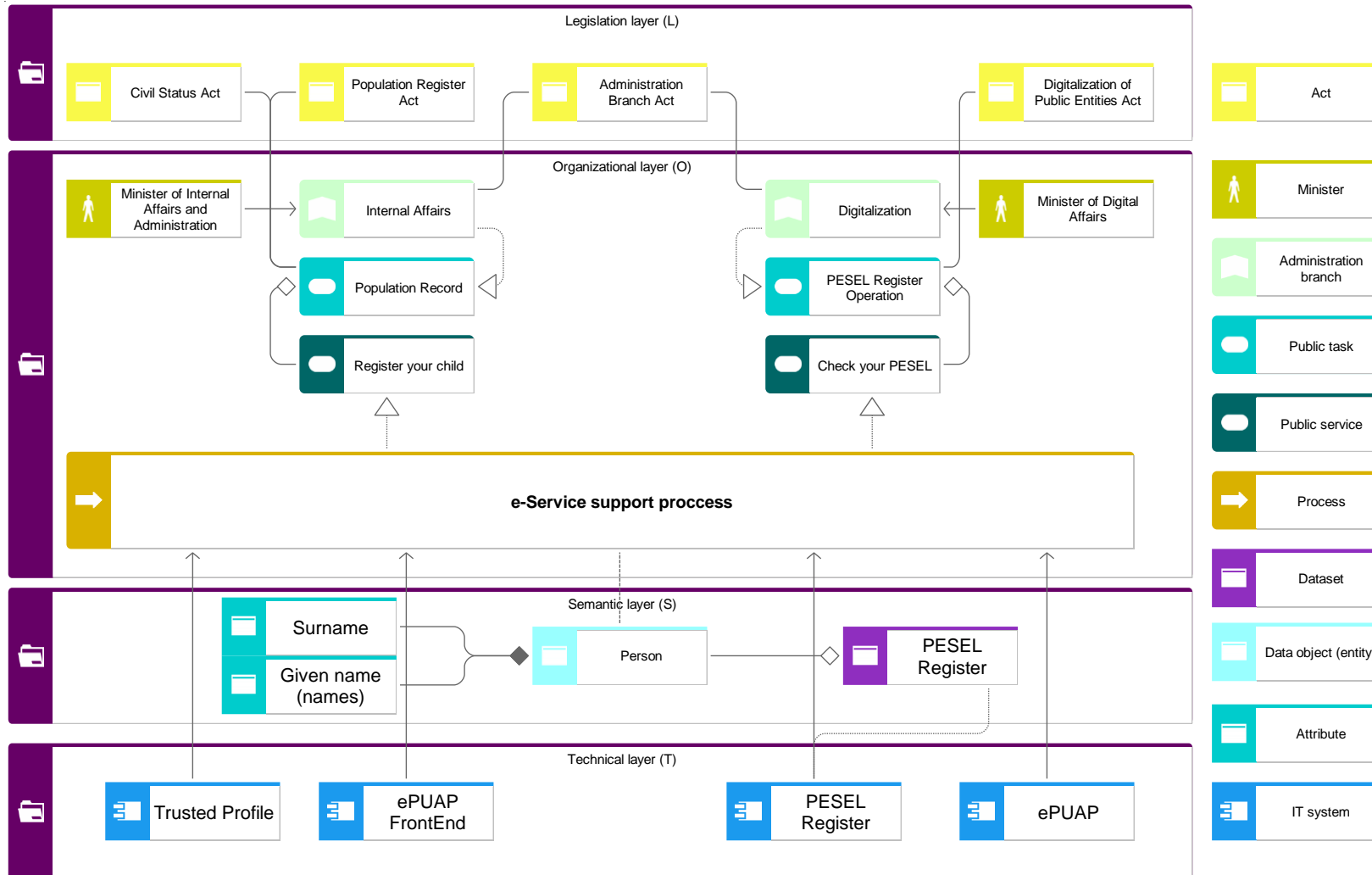
# State Information Architecture

The State Information Architecture (AIP) is a tool for strategic management of the state digitalization: planning, development and maintenance of information systems and information resources of the public administration

- Goals:
  - A coherent, efficient information system of the state, providing services to citizens and entrepreneurs, in a cost-effective and qualitative manner
  - Interoperability of public administration IT systems and data sets, elimination of unnecessary duplication
- Enterprise Architecture adapted to the conditions of public administration and scope: the entire state
- Developed in Department of Projects and Strategy (Ministry of Digital Affairs)
- Based on TOGAF and EIRA (European Interoperability Reference Architecture)
- Archimate



# AIP semantic layer – State data architecture



AIP Repository  
(ARIS)

Architectural  
model of the  
State's IT systems  
and data resources

4 layers (EIRA)

Strategic level

# State data architecture

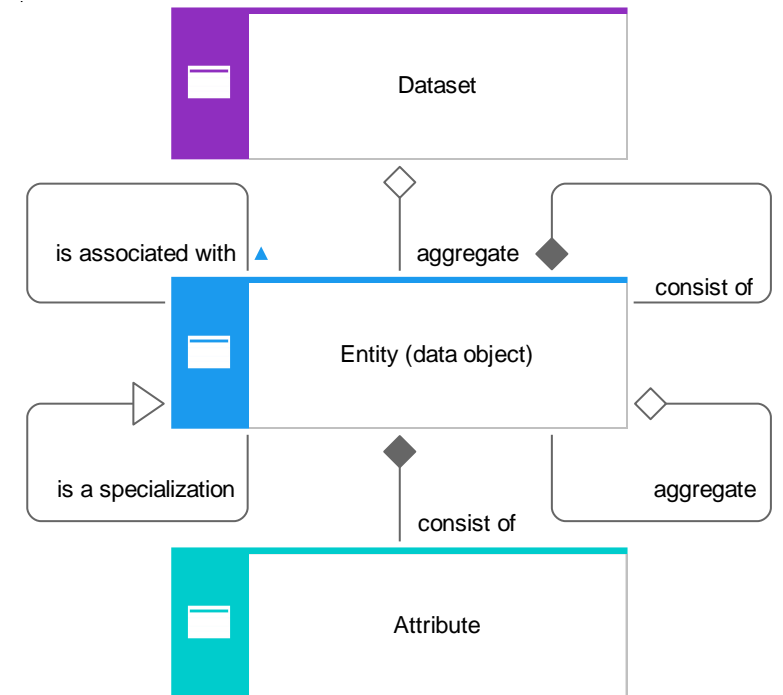
The state data architecture is a tool for strategic management of the planning, development and maintenance of public administration data resources

Goal: Effectively provide reliable, trusted, high-quality reference data for e-services and to enhance interoperability of public administration data sets

The basis for all data management activities in the state

# State data architecture - activities

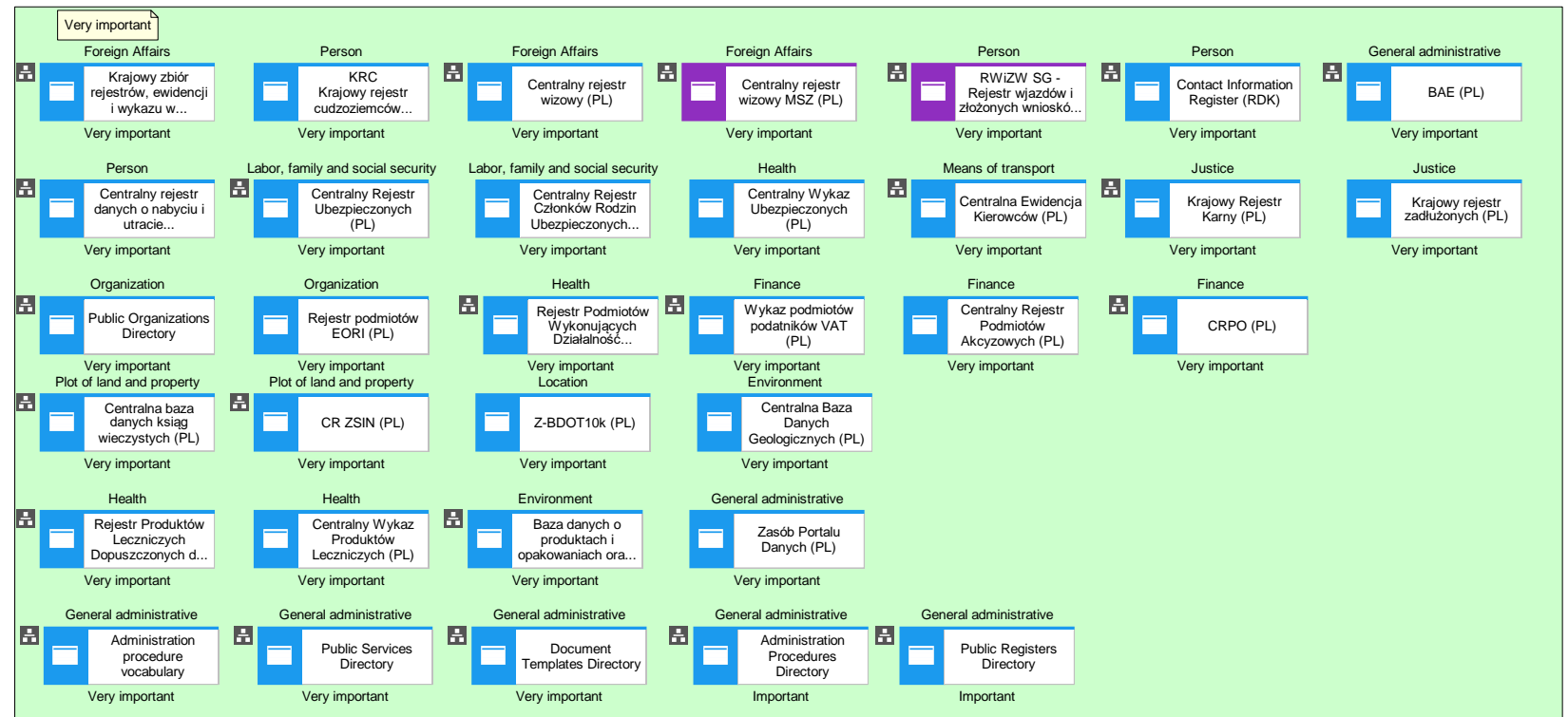
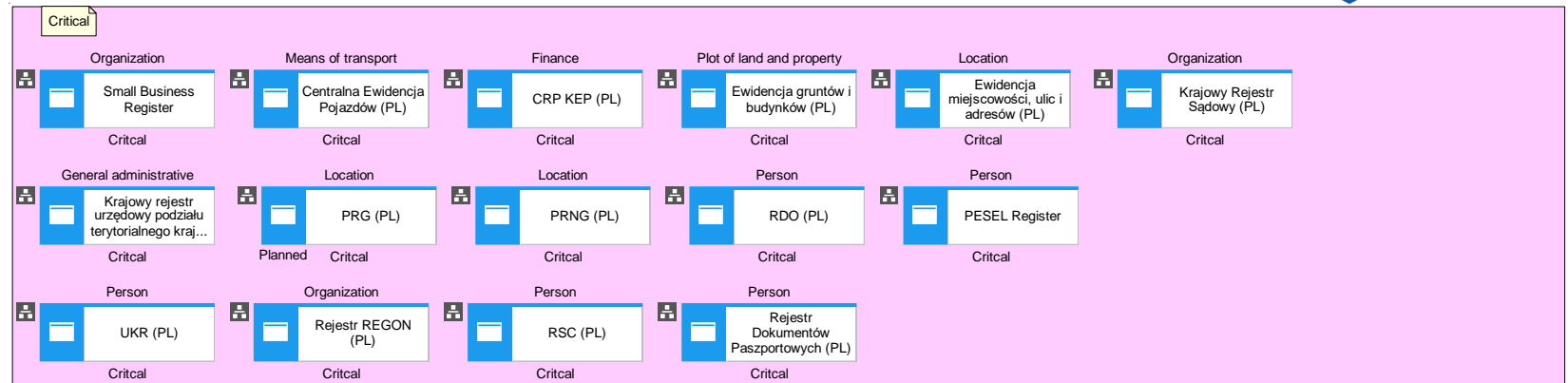
- Identification and high-level modeling of the state's information resources, especially legally mandated registers
- Identification and modeling of key data objects - Conceptual model of state data
- Identification and modeling of data flows
- Classification of registers and data objects



# Classification of registers in the Repository

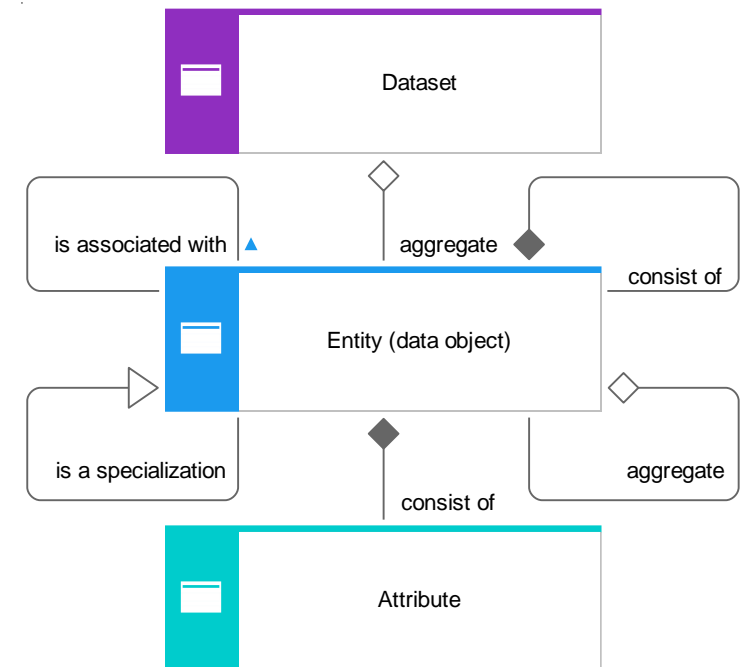
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1. Subject area
2. Relevance for AIP
3. Legal authorization
4. Public register
5. Constituent function
6. **Referentiality**
7. Derivative
8. Scope of use
9. Internationality
10. Content
11. Method of maintenance
12. Teritorial scope



# State data architecture - activities

- Identification and high-level modeling of the state's information resources, especially legally mandated registers
- Identification and modeling of key data objects - Conceptual model of state data
- Identification and modeling of data flows
- Classification of registers and data objects
- Division into subject areas

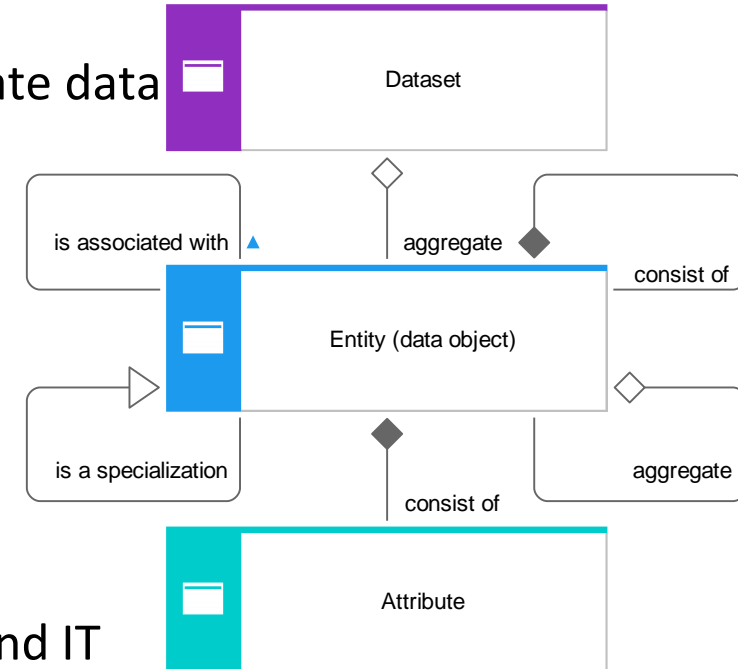


# Registers by subject area (18)

<p><b>General administrative</b></p> <p>BAE (PL)</p> <p>Krajowy rejestr urzędowy podziału terytorialnego kraj...</p> <p>Zasób Portalu Danych (PL)</p> <p>Document Templates Directory</p>	<p><b>Person</b></p> <p>PESEL Register</p> <p>RDO (PL)</p> <p>RSC (PL)</p> <p>Rejestr Dokumentów Paszportowych (PL)</p>	<p><b>Organization</b></p> <p>Small Business Register</p> <p>Rejestr REGON (PL)</p> <p>Rejestr przedstawicielstw przedsiębiorców...</p> <p>Krajowy Rejestr Sądowy (PL)</p>
<p><b>Location</b></p> <p>Ewidencja miejscowości, ulic i adresów (PL)</p> <p>PRG (PL)</p> <p>Rejestr oznaczeń geograficznych (PL)</p> <p>PRNG (PL)</p>	<p><b>Plot of land and property</b></p> <p>Ewidencja gruntów i budynków (PL)</p> <p>Centralna baza danych ksiąg wieczystych (PL)</p> <p>CR ZSIN (PL)</p> <p>Rejestr Cen i Wartości Nieruchomości (PL)</p>	<p><b>Means of transport</b></p> <p>Centralna Ewidencja Pojazdów (PL)</p> <p>Rejestr Cywilnych Statków Powietrznych (PL)</p> <p>Rejestr statków rybackich (PL)</p> <p>Krajowy rejestr pojazdów kolejowych (NVR)...</p>
<p><b>Public safety and defense</b></p> <p>Krajowe Centrum Informacji Kryminalnych (PL)</p> <p>Ewidencja wojskowa (PL)</p> <p>Ewidencja danych dotyczących przelotu pasażera...</p> <p>Rejestr osób posiadających pozwolenie na bro...</p>	<p><b>Education and science</b></p> <p>Rejestr szkół i placówek oświatowych (PL)</p> <p>Ogólnopolski wykaz studentów (PL)</p> <p>Wykaz prowadzonych studiów na...</p> <p>Wykaz instytucji systemu szkolnictwa wyższego i nauki...</p>	<p><b>Finance</b></p> <p>CRP KEP (PL)</p> <p>Ewidencja deklaracji podatkowych (PL)</p> <p>CRPO (PL)</p> <p>Rejestr Zastawów Skarbowych (PL)</p>
<p><b>Economy</b></p> <p>Rejestr patentowy (PL)</p> <p>CRUB - Centralny rejestr osób posiadających...</p> <p>Rejestr znaków towarowych (PL)</p> <p>Rejestr produktów niebezpiecznych (PL)</p>	<p><b>Infrastructure and transportation</b></p> <p>Ewidencja rozpoczynanych i oddawanych do...</p> <p>Informacja o infrastrukturze (planowanej)...</p> <p>KREPTD (PL)</p> <p>K-GESUT (PL)</p>	<p><b>Justice</b></p> <p>Krajowy Rejestr Karny (PL)</p> <p>Centralna Baza Danych Osób Pozbawionych...</p> <p>Rejestr Sprawców Przepięstw na Tle Seksualnym (PL)</p> <p>Elektroniczne archiwum dla sądów powszechnych (PL)</p>
<p><b>Culture and recreation</b></p> <p>Krajowa ewidencja zabytków (PL)</p> <p>Narodowy zasób biblioteczny (PL)</p> <p>Centralna Ewidencja Organizatorów Turystyki i...</p> <p>Centralny Wykaz Obiektów Hotelarskich (PL)</p>	<p><b>Agriculture and fisheries</b></p> <p>Ewidencja producentów KSEP (PL)</p> <p>Rejestr zwierząt gospodarskich oznakowanych i...</p> <p>System Identyfikacji Działek Rolnych (PL)</p> <p>Centralna baza danych koniowatych (PL)</p>	<p><b>Foreign Affairs</b></p> <p>Krajowy zbiór rejestrów, ewidencji i wykazu w...</p> <p>Centralny rejestr wizowy (PL)</p> <p>Centralny rejestr przyznanych i unieważnionych...</p> <p>Rejestr zgód na pobyt ze względów humanitarnych i...</p>
<p><b>Environment</b></p> <p>Centralny Rejestr Form Ochrony Przyrody (CRFOP)...</p> <p>Baza danych o produktach i opakowaniach ora...</p> <p>Centralna Baza Danych Geologicznych (PL)</p> <p>Krajowa baza Rejestr danych o emisjach gazów...</p>	<p><b>Health</b></p> <p>Rejestr Podmiotów Wykonujących Działalność...</p> <p>Centralny Wykaz Usługodawców (PL)</p> <p>Rejestr Produktów Leczniczych Dopuszczonych d...</p> <p>Centralny Wykaz Pracowników Medycznych (PL)</p>	<p><b>Labor, family and social security</b></p> <p>Centralny Rejestr Płatników Składek (PL)</p> <p>Rejestr osób bezrobotnych i poszukujących...</p> <p>Centralny Rejestr Ubezpieczonych (PL)</p> <p>Centralny Rejestr Członków Rodzin Ubezpieczonych...</p>

# State data architecture - activities

- Identification and high-level modeling of the state's information resources, especially legally mandated registers
- Identification and modeling of key data objects - Conceptual model of state data
- Identification and modeling of data flows
- Classification of registers and data objects
- Division into subject areas
- Concentration on basic data objects and key registers
- Identification of reference registers
- Identification of existing issues, their root causes
- Analysis, recommendations (proposals for changes to existing registers and IT systems, legal and organizational solutions, guidelines and recommendations for their development), standards in the areas of basic data objects
- To-be vision of the State's data architecture



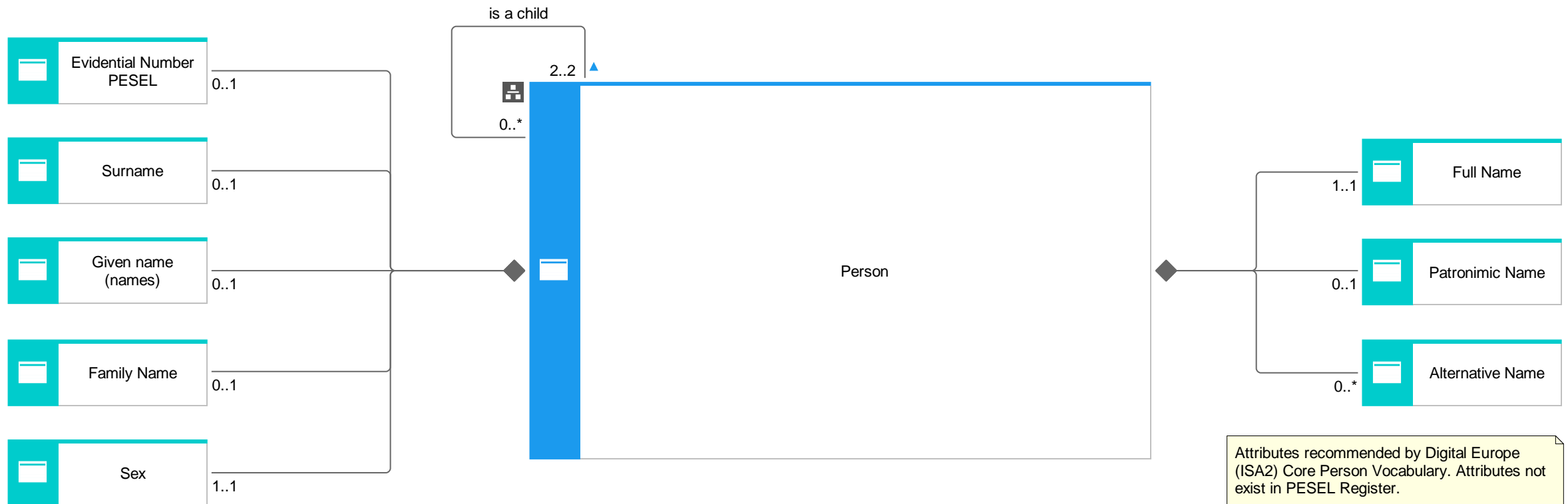
# State data architecture - principles

- Common, unambiguous definitions of data objects - a common understanding of data across the AIP (*issue: differences in definitions in different legal acts*)
- The same unique, immutable identifiers for data objects, devoid of coded properties
- The same classification vocabularies
- Elimination of unnecessary data redundancy, keeping the necessary minimum
- Entering data into registers / systems / e-services only once
- Using reference data
- Formal establishment of reference registers
- Effective sharing of reference data to all authorized parties
- Common AIP models of data objects (attributes, relations to other objects)
- AIP models of individual registers using AIP models of data objects
- Canonical models of shared data should be derived from AIP models

# Standard model of the data object

## Person - attributes

Core attributes of Person data object Diagram.

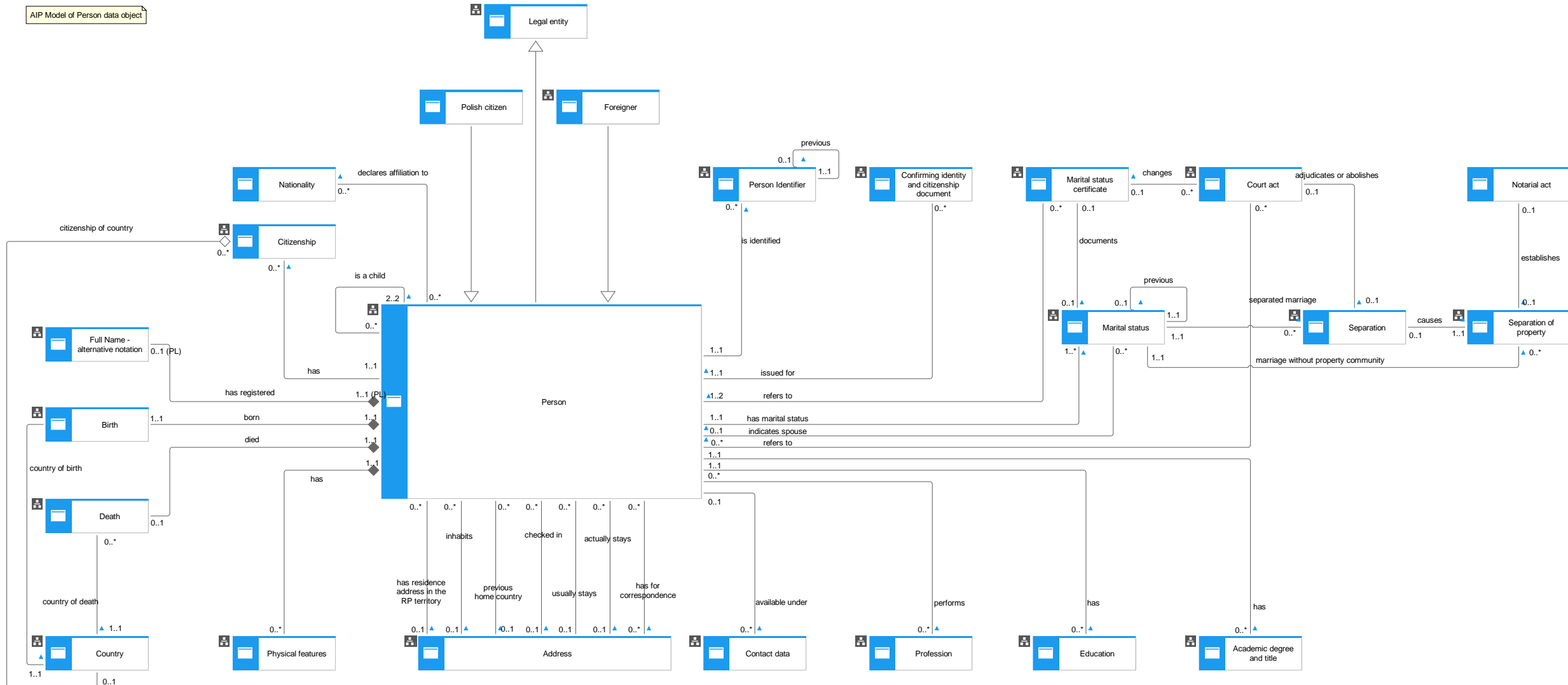


AIP model is not only a diagram

# Standard model of the data object

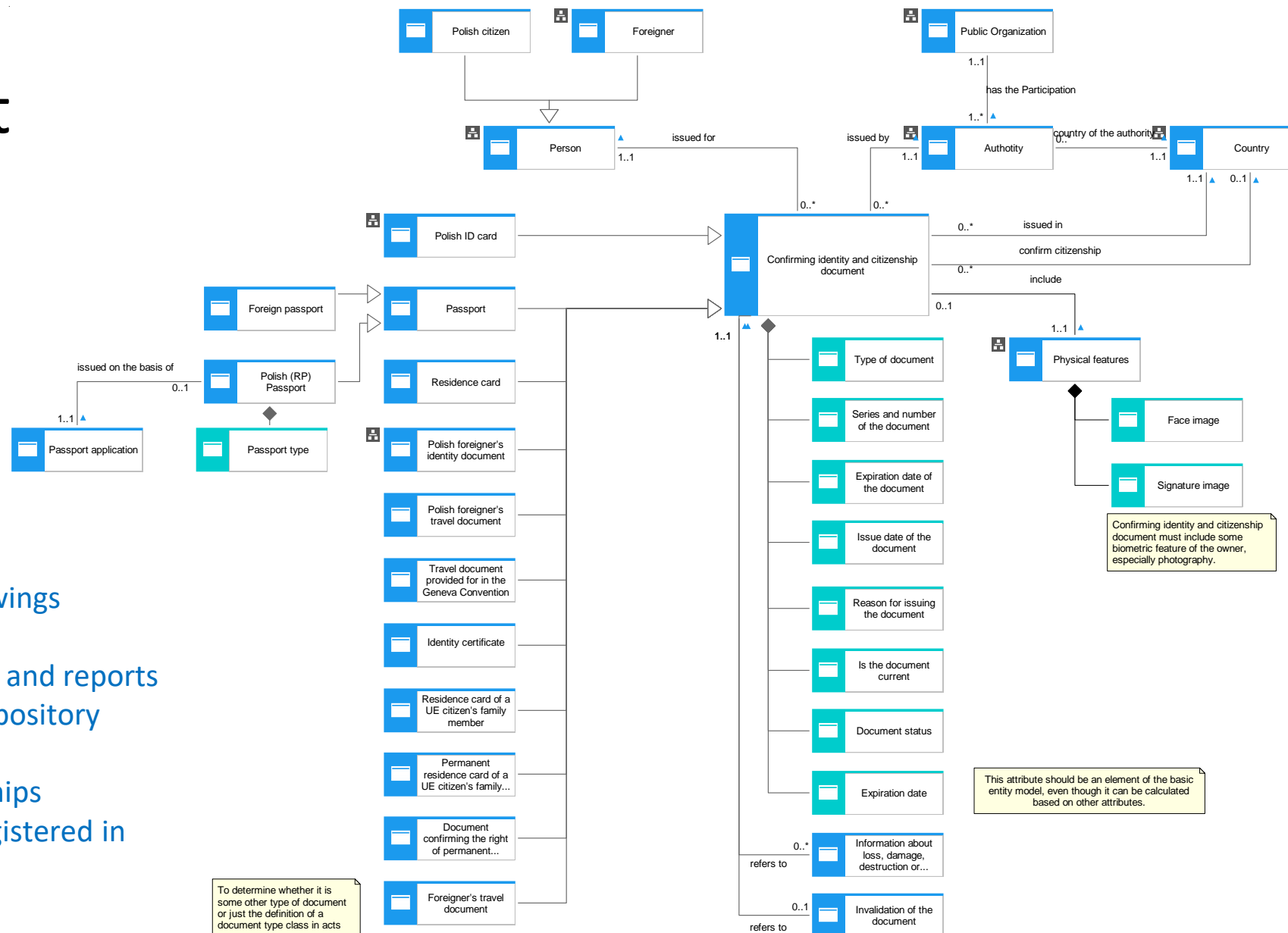
## Person - main relations

AIP Model of Person data object



# Standard model of the data object

## Identity document

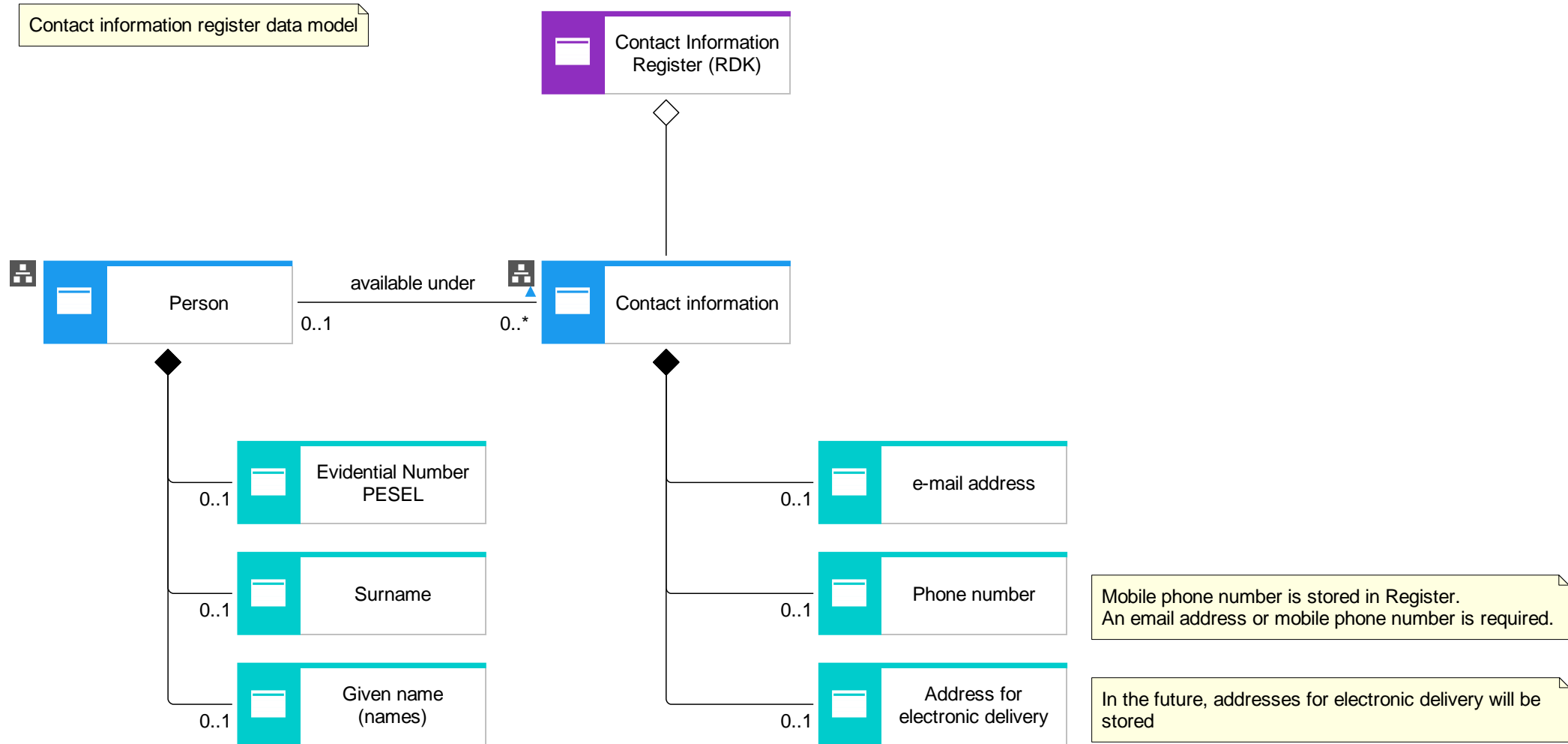


Diagrams are not drawings

They are the interface and reports  
from the database Repository

Objects and relationships  
between them are registered in  
Repository only once

# Standard model of the dataset – RDK

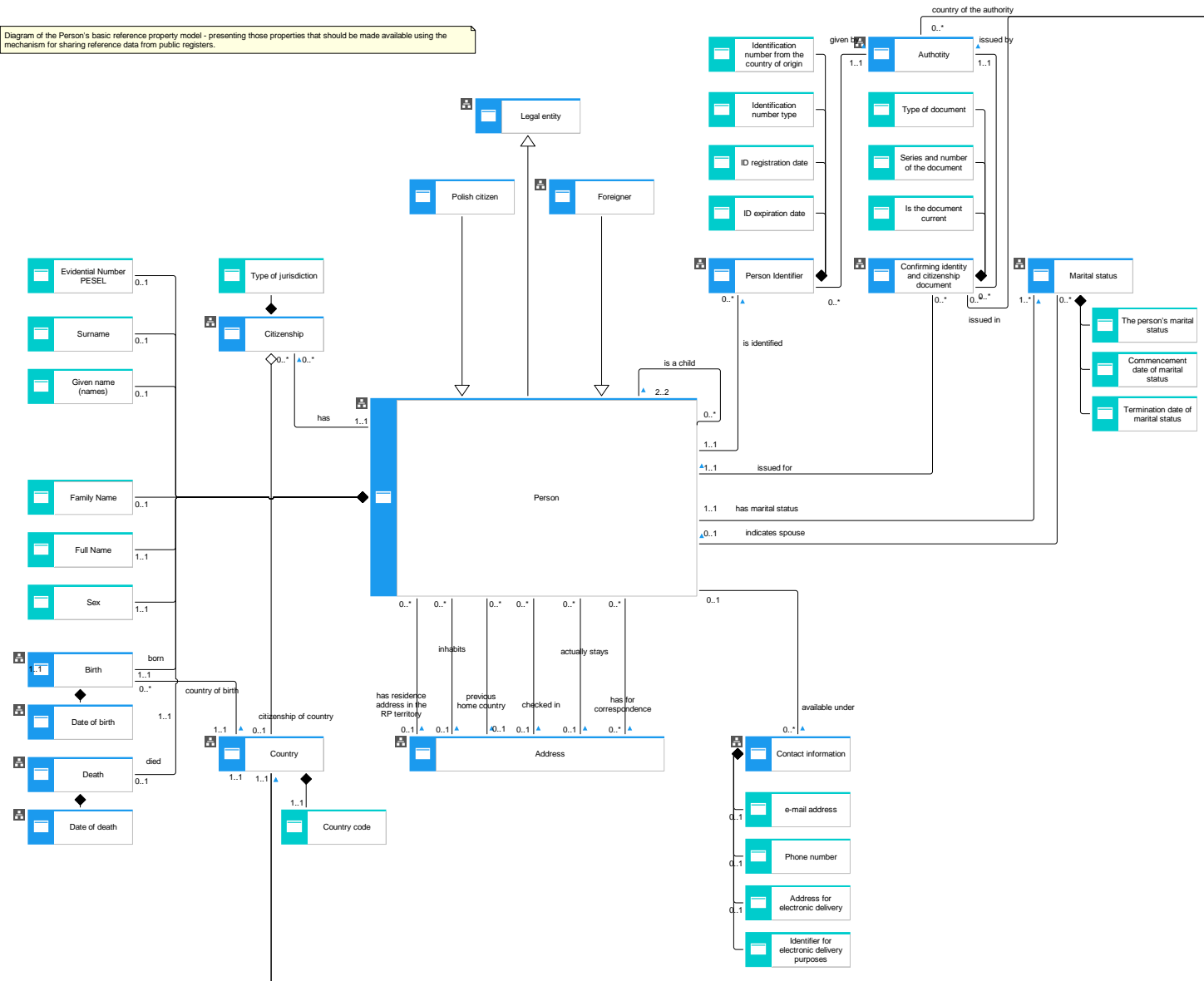


AIP model of the dataset uses AIP models of data objects



# Basic reference properties - Person

Diagram of the Person's basic reference property model - presenting those properties that should be made available using the mechanism for sharing reference data from public registers.



- Agreed by the experts of the Data Architecture Group of the KRMC IT Architecture Council
- These data are the most frequently used
- They should be made available as reference data in the first stage

# To-be vision

## Registers and reference data

*The data collected in the public register should give a guarantee of its accuracy since both public authorities and private entities perform based on the information contained therein.*

**Public register** - a collection of data in an orderly structure, maintained by **an organization performing public tasks** on the basis of legal regulations or executive acts issued on their basis

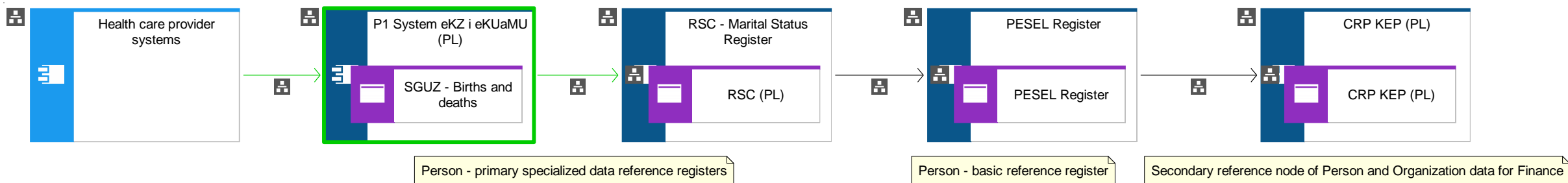
**Reference public register** - a public register **formally** designated as a trusted reference data source for other public registers and information systems **in a defined scope of data**

**Reference data** – data in register having the attribute of authenticity

Planned empowerment in the Act on informatization

# Reference public register

- It does not have to be the primary source of data, but as close to it as possible
- It is designed to make the data effectively available to a wide range of users who have a real interest in accessing it
- Must ensure that certain requirements for storing and sharing data are met
- Precisely indicated the scope of the data for which it is a reference and the source of the data
  - Primary data and data from other reference registers
  - Updated on current basis
- Some registers will function as “reference nodes” - Secondary reference registers providing reference data for a narrower range of users
  - Derived from reference registers of various data objects (e.g. a subset of persons and organizations)
  - Often enriched with sector-specific reference data

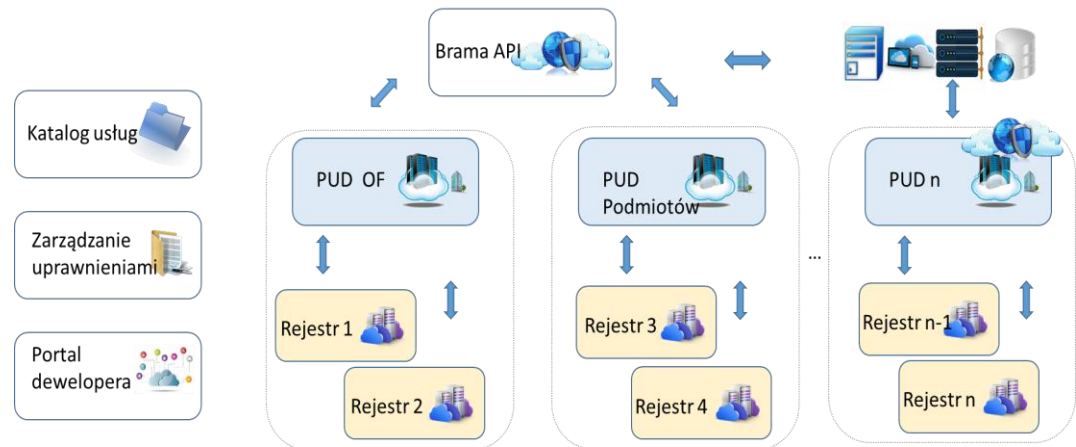


# Effective sharing of data from public registers - the concept

- The reference register business owner ensures **the security and quality of the data** so that it is complete, always up-to-date and compliant with applicable laws, maintains reference dictionaries, defines access conditions and procedures for reconciling inconsistencies
- Data are available using **API services**, in accordance with the established canonical model
- The organization performing public tasks **is obliged to use reference data**
- When data is entered, **it is verified** in advance for compliance with the reference register for the data
- In the event of a negative verification result, the organization keeping the register shall immediately inform the organization keeping the reference register of the negative verification result
- **Integrated API services** - data from multiple reference registers
- **National data sharing platform** from reference registers

# National data sharing platform

- National Data Sharing Platform (KPUD) is an organizational and technical solution providing standardized mechanisms for access to data processed in reference public registers
- Goal: To provide access to high quality, up-to-date, reference data processed in public administration in an effective, efficient, secure, accountable, standardized manner
- KPUD consists of:
  - **Central solutions** that provide common mechanisms for cooperation of area platforms for sharing reference data
  - **Area-based reference data sharing platforms** providing access to reference public registers connected to a given platform





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# Thank you for your attention!

Read more:



<https://ia.gov.pl>

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