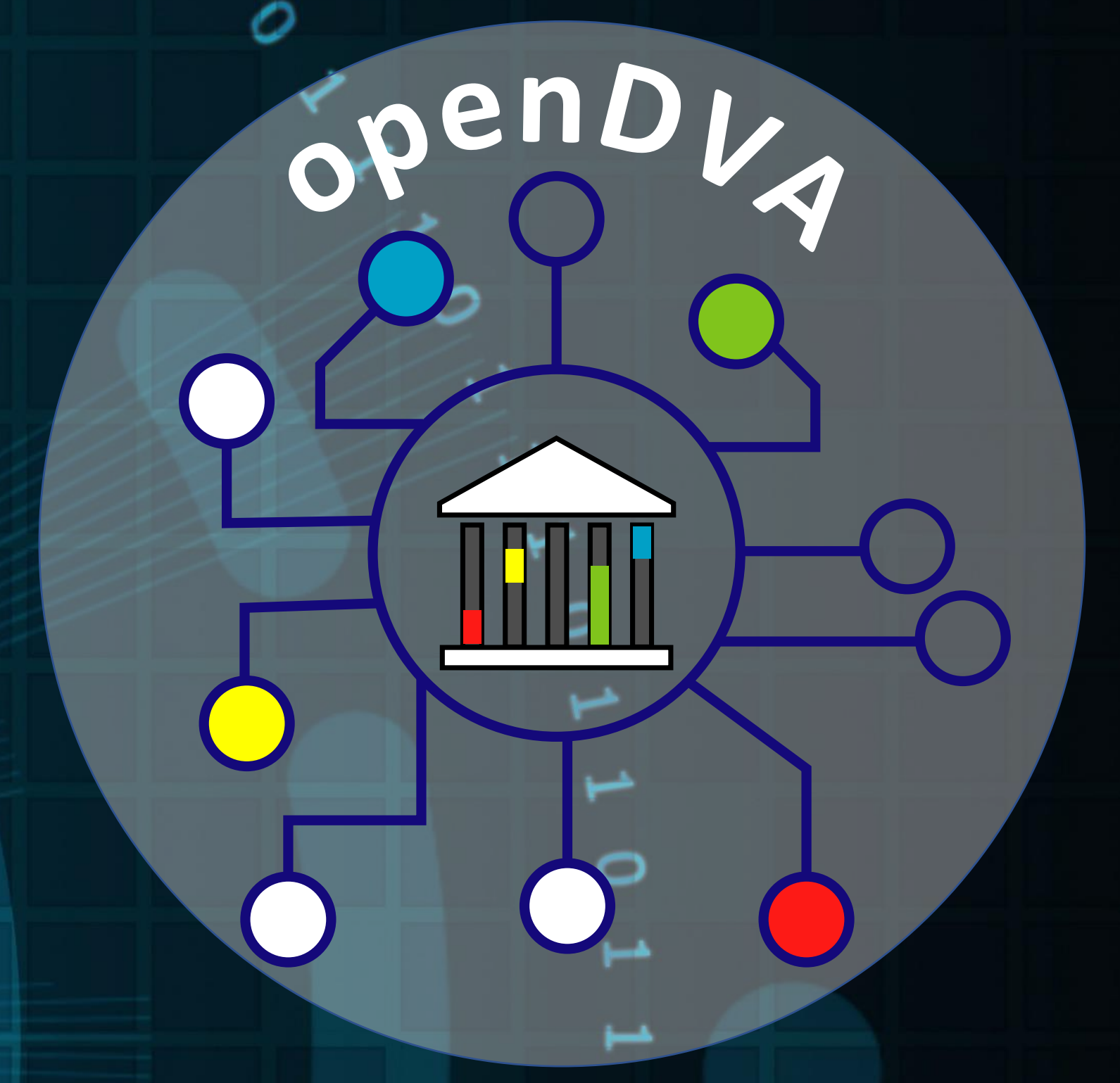


Data and its challenges on the path to end-to-end digitization in public administration



Challenges

- Missing access to necessary information
- Highly complex federal service landscape
- Diverging interests of service providers
- Lack of flexibility in public administration services

Approach

- Natural Language Processing techniques (NLP)
- Semantic Web techniques
- Unified communication standards / data types
- Low Code / No Code frameworks

Contributions

- Public documentation of relevant standards, services, and governing authorities
- Example service implementation from JenArbeit
- FIM standard extension / reference architecture

Legal Text Analysis

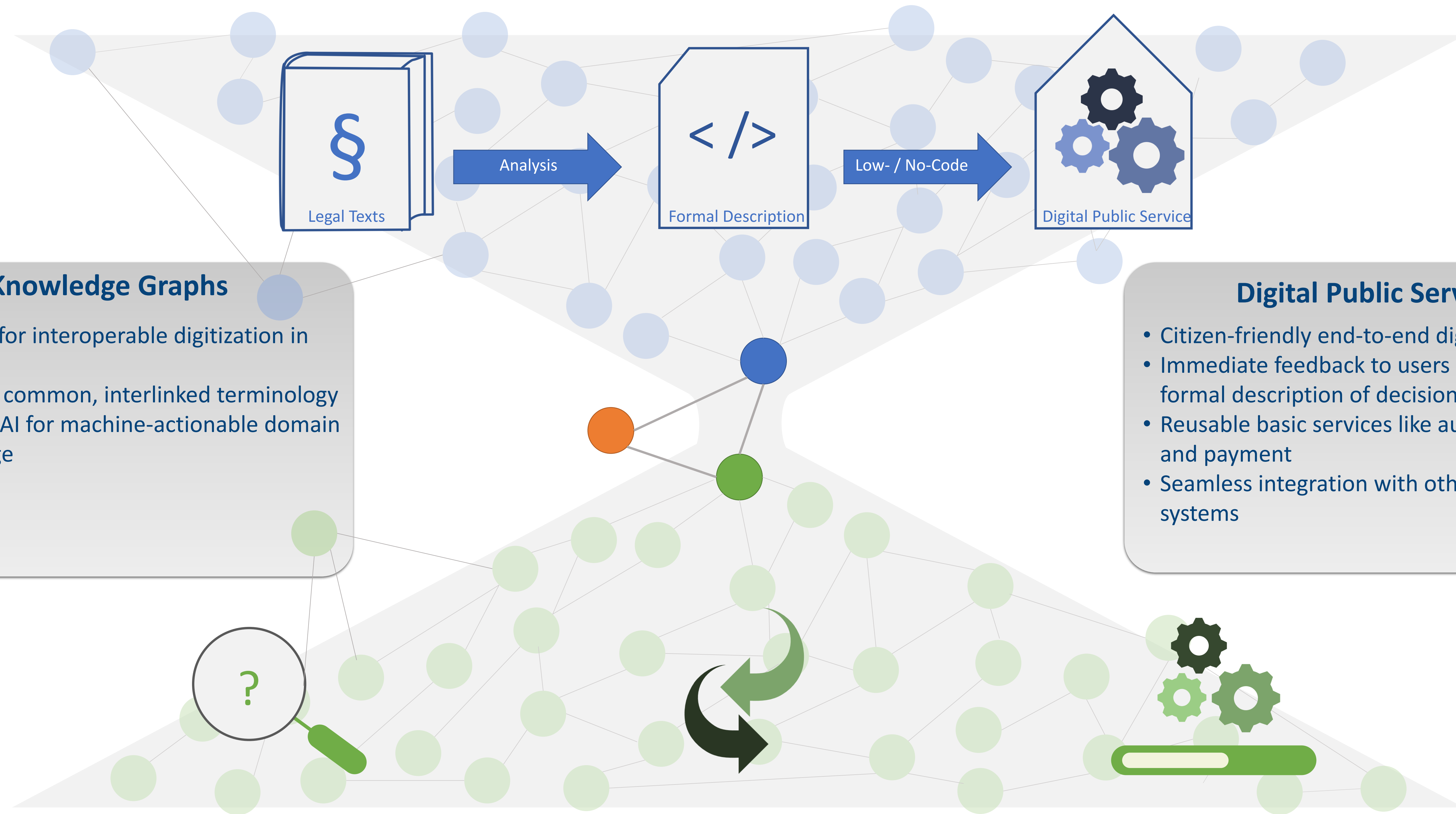
- Legal texts as basis for public service processes
- Identify process elements (actors, activities, ...)
- Support annotation tasks by using NLP techniques
- Goal: Formal description of service processes

Formal Description

- Various data exchange formats like XOEV, FIM artifacts, or E-Akte
- Creation of formal description with decision trees generated with Rule Mapping or process descriptions with FIM as basis of automation
- Goal: Semantic enhancements for machine-actionability

Low-Code / No-Code

- Collaboration for public services between software engineering and public administration
- Enable domain experts from public administration (citizen developers) to create public services
- Eliminate communication bottlenecks
- Goal: Functioning framework while considering data privacy, security, and overall quality



Knowledge Graphs

- Essential for interoperable digitization in EGov
- Provide a common, interlinked terminology
- Symbolic AI for machine-actionable domain knowledge

Digital Public Service

- Citizen-friendly end-to-end digitization
- Immediate feedback to users through formal description of decision processes
- Reusable basic services like authentication and payment
- Seamless integration with other involved systems

Semantic Search

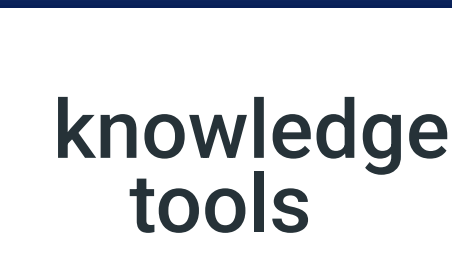
- Support fuzzy search queries going beyond exact-match keyword search
- Allow for structured queries to limit scope, e.g., to actors in specific roles

Change Management

- Detect impact of legislative changes on processes and IT landscape: What needs to change where?
- Enable dry-runs during legislative procedures before changes come into effect

Text Generation

- Create audience-specific versions, e.g., for laymen or in simple language
- Make processes more accessible and understandable for a broader audience



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