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Electronic Healthcare Exchange (EHE)

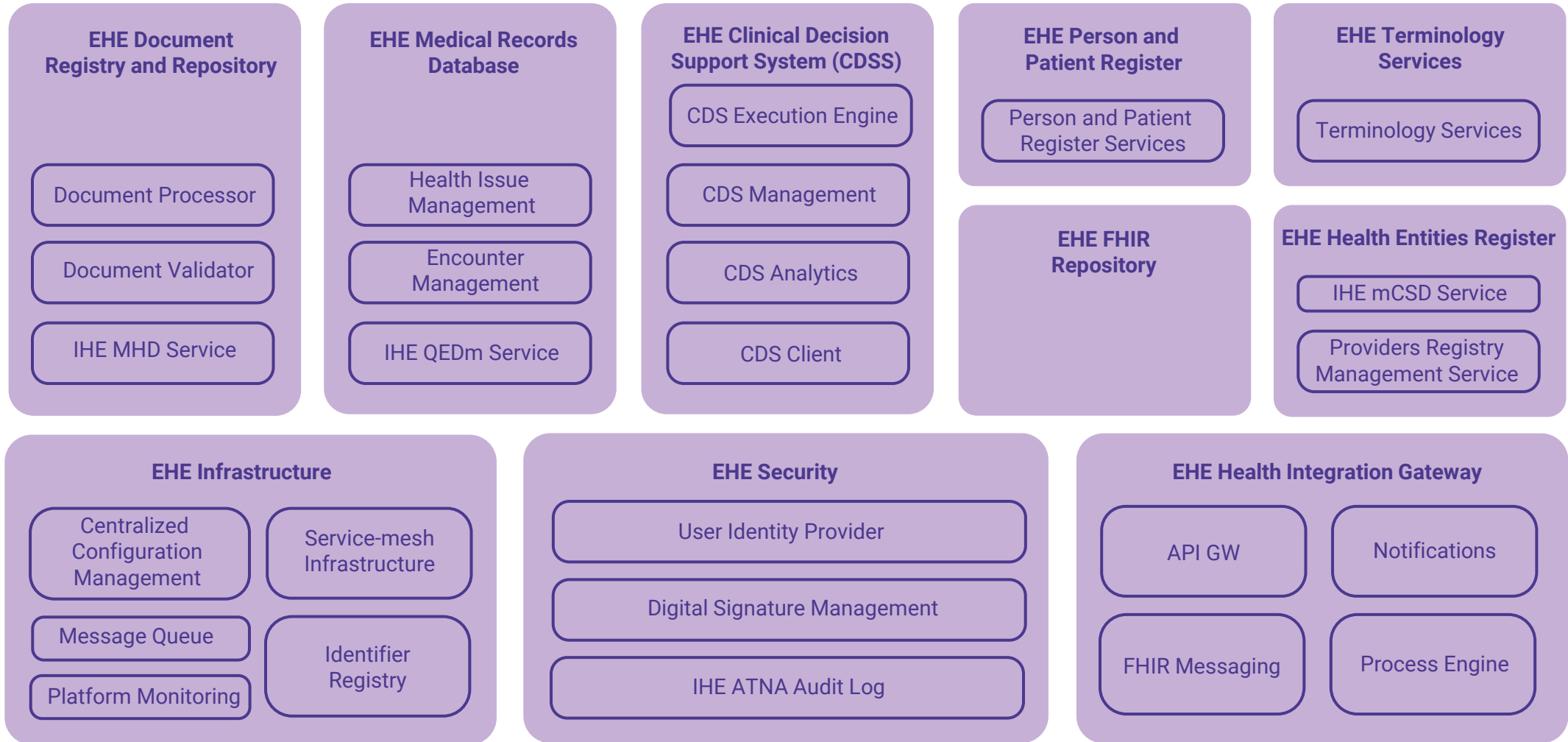Version 5.1
Commercial Presentation

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What is EHE?

- Electronic Healthcare Exchange (EHE) is a line of products fulfilling a variety of eHealth system needs, ranging from fundamental ones like infrastructure, security, and integration, over exchange and management of clinical documents and discrete medical information, to advanced functionalities like clinical decision support.
- Solutions made of different EHE products, alone or through integration with the existing infrastructure, support a wide range of processes in a healthcare system.
- EHE products are based on HL7 FHIR standard and IHE integration profiles.

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EHE Document Registry and Repository
- Document Processor
- Document Validator
- IHE MHD Service

EHE Medical Records Database
- Health Issue Management
- Encounter Management
- IHE QEDm Service

EHE Clinical Decision Support System (CDSS)
- CDS Execution Engine
- CDS Management
- CDS Analytics
- CDS Client

EHE Person and Patient Register
- Person and Patient Register Services

EHE FHIR Repository

EHE Terminology Services
- Terminology Services

EHE Health Entities Register
- IHE mCSD Service
- Providers Registry Management Service

EHE Infrastructure
- Centralized Configuration Management
- Service-mesh Infrastructure
- Message Queue
- Identifier Registry
- Platform Monitoring

EHE Security
- User Identity Provider
- Digital Signature Management
- IHE ATNA Audit Log

EHE Health Integration Gateway
- API GW
- Notifications
- FHIR Messaging
- Process Engine

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EHE Clinical Decision Support System

● A generic system for managing, storing, and retrieving clinical and healthcare information required when making decisions about the type and the way of providing healthcare to patients.

● Combines clinical knowledge with clinical information from the patients' health records and provides health professionals with the information necessary to choose the most effective and efficient personalized health care for patients.
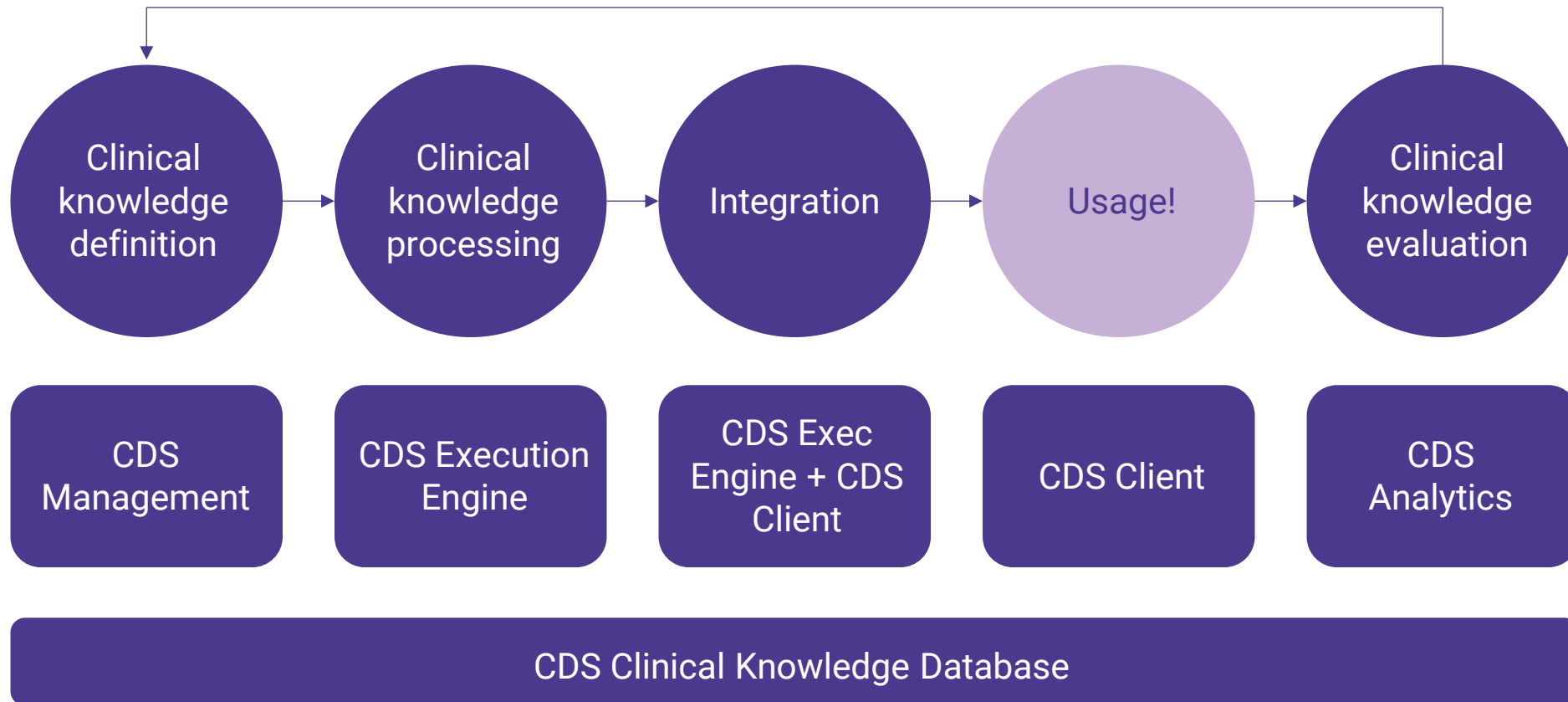
| Recommended diagnostic procedures | efficient and accurate determination of the patient's health condition |

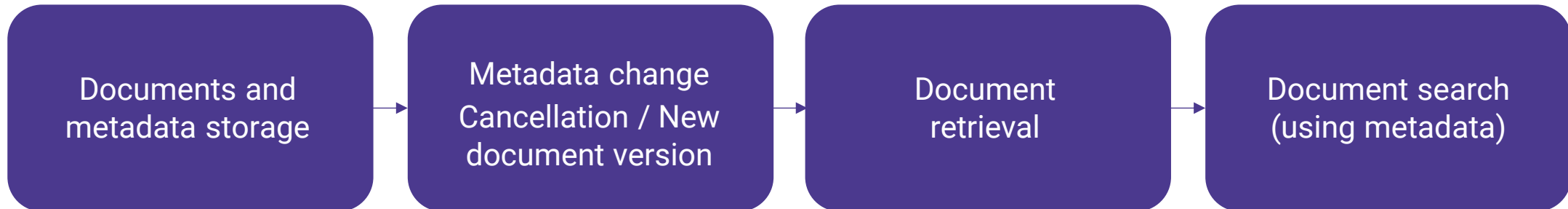| Recommended therapeutic procedures, medications and other medical procedures | treatment of identified health conditions |

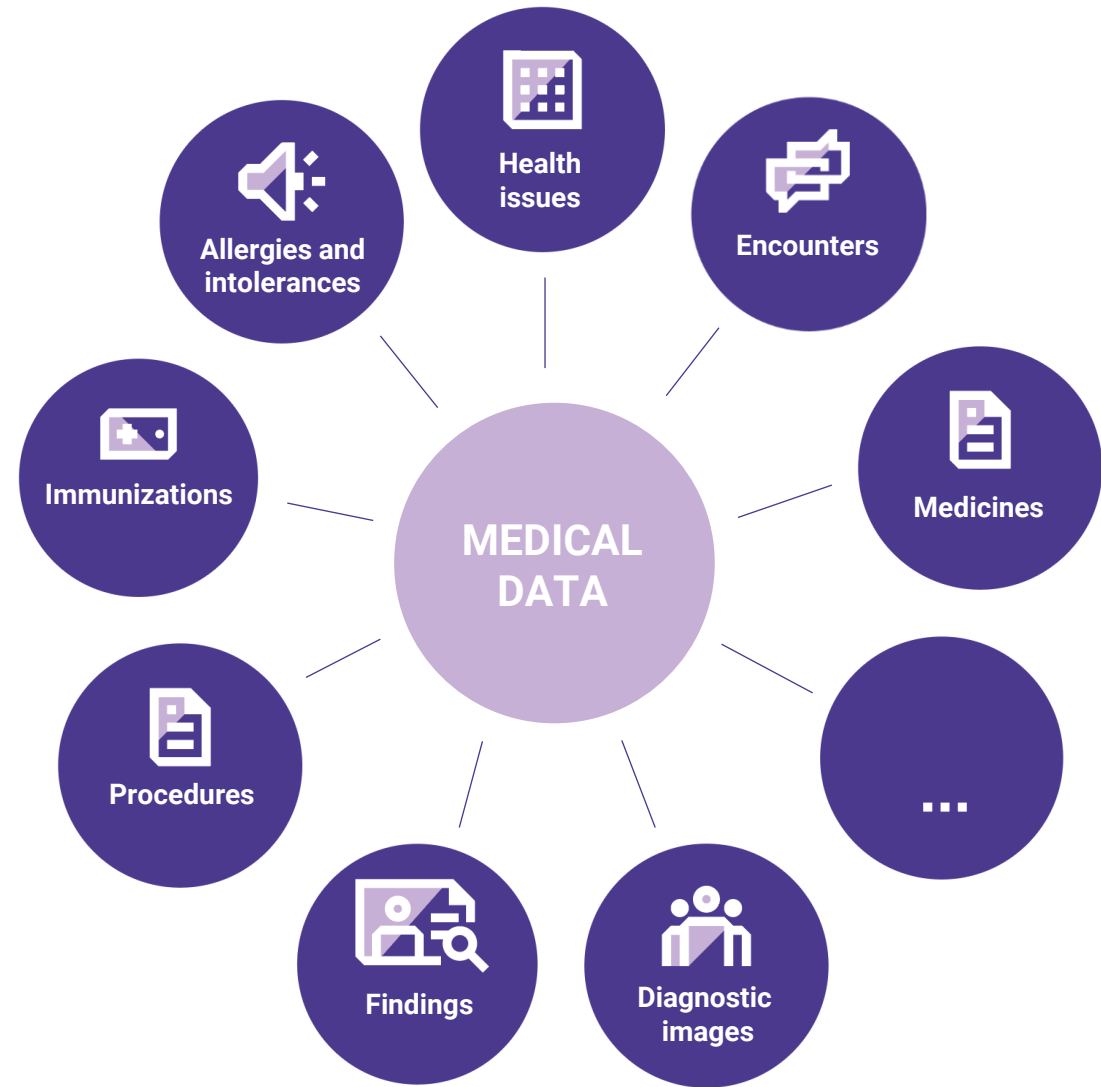| Screening and prevention programs | preventing unwanted health conditions |

EHE Document Registry and Repository

Enables the exchange of healthcare documents in a standardized manner in accordance with the IHE MHD integration profile, the processing of these documents, and the storage of clinical and healthcare documents in a central registry and repository.

| Documents and metadata storage | → | Metadata change Cancellation / New document version | → | Document retrieval | → | Document search (using metadata) |

EHE Medical Records Database

Enables:

● the management of medical data at the level of structured subsets of data that represent certain entities or events in the healthcare system in the form of HL7 FHIR resources

● access to these data through an integration interface based on the IHE QEDm integration profile.

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EHE Health Entities Register

HEALTHCARE PROFESSIONALS REGISTER

Manages data on healthcare professionals, both medical and non-medical personnel:
- Identifier
- Role
- Specialization.

HEALTHCARE ORGANIZATIONS REGISTER

Manages basic data, internal structure, connections about organizations in healthcare:
- Identifier(s)
- Name (full and short)
- Category and type
- Address and contact information
- Data on the constituent parts of the organization

Data usage by other modules through appropriate integration services.

EHE Person and Patient Register

Register of identification and administrative data on patients and people working in healthcare based on the HL7 FHIR standard and the integration profiles IHE PDQm, IHE PIXm and IHE PMIR.

Data storage

Synchronization of data from external sources

Creation, management and search of patient data

Special patient categories (newborns, foreigners, unidentified persons)

Merging of records

EHE Terminology Services

Enables the centralized management and use of terminologies (code systems, value sets and concept maps) based on the HL7 FHIR standard and the IHE SVCM integration profile.

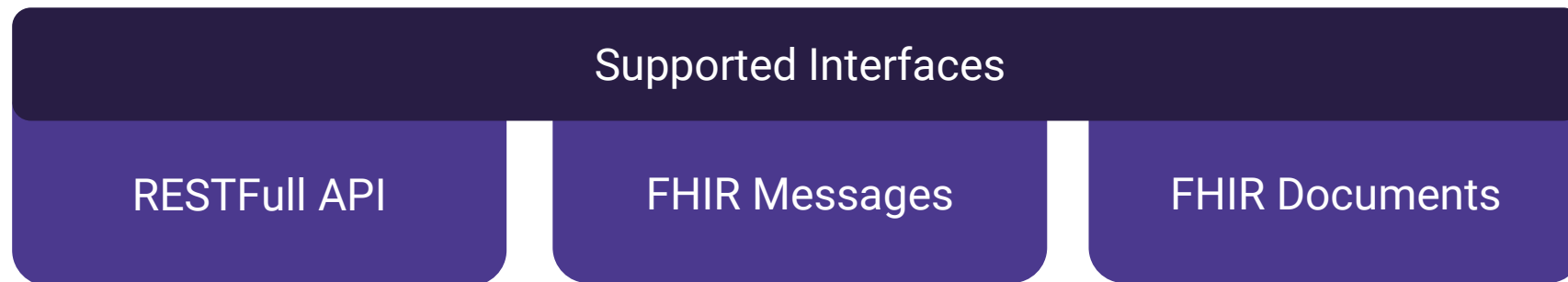| Synchronization of terminologies	Use of terminologies

Synchronization from external sources

Terminologies search
Terminologies retrieval
Code validation

EHE FHIR Repository

● A specialized database that enables the management and storage of various types of data used in healthcare processes (clinical, administrative, public health, research, etc.), in accordance with HL7 FHIR standard.
● Other EHE products use this server to store their data in a database.

Supported Interfaces

RESTFull API	FHIR Messages	FHIR Documents

EHE Health Integration Gateway

● Enables safe and reliable connecting of information systems and applications in healthcare.

API GW

● Publication of the solution component services
● Directing inquiries
● Authorization of access to services
● Limiting the maximum number of service requests
● Temporary interruption of service access
● Filtering and directing requests

FHIR Messaging

● Validation of structure of FHIR messages against FHIR profiles
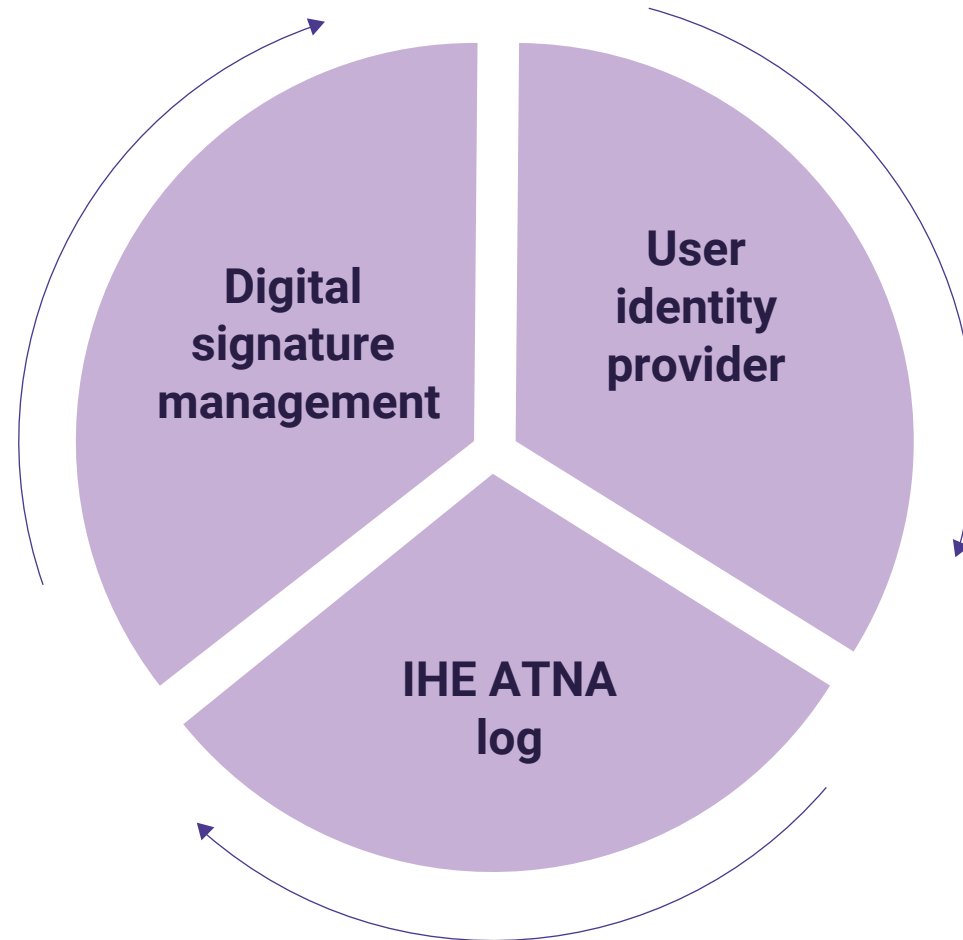
Process Engine

● State Machine for execution of processes
● Timer Service for setting of timers and corresponding functions (services)

Notifications

● Sending notifications about data changes
● Push / pull mechanism

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EHE Security

● Enables the definition and implementation of security access rules and exchange and storage of information.
● Can ensure the enforcement of security rules based on the IHE IUA integration profile and the recommendations of the HL7 FHIR standard (implementation profile SMART on FHIR Backend Services).
● Used for other components within the EHE product portfolio or for other custom components.

Digital signature management

User identity provider

IHE ATNA log

EHE Infrastructure

● Provides basic functionalities that enable efficient and reliable exchange of information among system components, simple installation and configuration of individual components and services, monitoring of the system and management of the system and its components.
● Supports the complete EHE portfolio and can also be used for solutions developed by other manufacturers.

Centralized Configuration Management	Identifier Registry	Platform Monitoring	Message Queue	Service Mesh Infrastructure