

Providing terminologies via the DSF

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For the Workshop "Central Terminology Server for MII & NUM: Actual state in 2024"

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Beginning

- Part of a Master thesis at the institute of medical informatics
- Idea using the Data Sharing Framework (DSF) developed at the HiGHmed location Heilbronn
- Preparation: DSF Spring School in March 2024 in Heilbronn
 - Introduction to DSF
 - Learning to build an own process plugin



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Developing a process plugin of the syndication algorithm for terminology resources for a distributed network at German university hospitals



Motivation

- To enhance the use of electronic health data nationwide
- Challenges:
 - Syntactical interoperability
 - To receive, read and access data and content -> standard such as FHIR
 - Semantic interoperability
 - To understand the meaning of the data -> terminologies such as SNOMED CT
- Terminology server are not present at every MII location, because it can be complex and expensive
- Keeping it up to date is crucial for validating codes
- Goal: develop a system to make it easy and accessible for locations to keep terminology servers up to date



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Introduction - Data Sharing Framework (DSF)

- Goal: nationwide standardized access and exchange of health data
- DSF builds the technical foundation
- Needs to be installed once at every location then works with plugins for different use cases
- <u>https://dsf.dev/</u>



Introduction - Data Sharing Framework (DSF)

• 2 main components: Business

Process Engine (BPE) and FHIR-

server

- BPE: local, secure
- FHIR-server: accessible to the

outside ("mailbox")



• FHIR-server communicate with each other, the BPE executes the process and uses local resources and has the access to local data



Introduction - Data Sharing Framework (DSF) - BPE

 Processes are modelled and executed via Business Process Model and Notation (BPMN)





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- Start Event; Task; Gateway; End Event





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Introduction - Data Sharing Framework (DSF) - FHIR

- FHIR-server "communicate" with each other
- That means they send FHIR **Task** resources
 - Task resource include a trigger parameter to e.g. start a process
- **StrcutureDefinition**: customizing resources
- ActivityDefinition: define which triggers are allowed at this process for certain roles/organisations
- **QuestionnaireResponse**: set of questions that the user needs to fill out; references a Questionnaire
- Questionnaire: defines questions and rules on how to answer them







































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Results ________Audication Algorithmus _Implementation













































Discussion - Outlook

- Automatic decision making based on rules (e.g. "accept all updates for SNOMED CT")
- Local terminology server should be exchangeable easily
- Different scenarios for the start of the algorithm
- Graphic user interface



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