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**Component(17)   
Task leader:** Anastasia Ailamaki

# SOFTWARE

## Hospital Databases Bundle (HDB)

### Local Database

**Contributing task:** T8.1.1 Infrastructure to support just-in-time analytics on raw medical data EPFL  
**Description:** Basic primitives for computation over multidimensional queries in the local hospital database. This component needs data but not necessarily data from ALL hospitals.  
**Dependencies:**

|  |  |  |
| --- | --- | --- |
| DATA | Hospital | Lille Hospital, Tel Aviv Hospital, Milano Hospital, Freiburg Hospital, CHUV Hospital |
| SOFTWARE | Data Factory (DF) | Data Anonymisation, Workflow Engine, Data Pipeline processes, Data Quality Processes, Data Storage, Data Integration |
|  | Hospital Databases Bundle (HDB) | Schema Mapping |
| SERVICES | Upgrade-Deploy-Release | MIP Integrated Releases Hospital Databases Bundle |
|  | Security & Monitoring | Data governance |

**Releases:**

|  |  |
| --- | --- |
| Planned functionalities at M18 | The plug-in is completed and deployed as part of the Hospital Bundle. |
| Planned functionality at M12 | The infrastructure to run this plug-in in the query engine will be ready. |
| Planned functionalities at M24 | The plug-in is completed and deployed as part of the Hospital Bundle and validated by HBP users. |

**User and Use cases:**

|  |  |
| --- | --- |
| User | Use cases |
| SP8 Platform Developer | Allow ad-hoc dimensionality reduction and feature extraction, e.g. on imaging and genetic data. It can be later added to the data factory as the regular feature extraction pipelines. |

**Contributing task:** T8.1.2 Installation of RAW on local computing infrastructure for hospital analytics requirements EPFL  
**Description:** Extend the local query engine to enable the use of distributed computing frameworks (like Spark).  
**Dependencies:**

|  |  |  |
| --- | --- | --- |
| DATA | Hospital | Lille Hospital, Tel Aviv Hospital, Milano Hospital, Freiburg Hospital, CHUV Hospital |
| SOFTWARE | Data Factory (DF) | Data Anonymisation, Workflow Engine, Data Pipeline processes, Data Storage, Data Integration, HPC |
|  | Hospital Databases Bundle (HDB) | Schema Mapping, Hospital Bundle Package |
| SERVICES | Upgrade-Deploy-Release | Micro-services |
|  | Security & Monitoring | Data governance |

**Releases:**

|  |  |
| --- | --- |
| Planned functionalities at M18 | The federation software is integrated with the new and improved query engine API's . |
| Planned functionality at M12 | The query engine extensions are implemented. |
| Planned functionalities at M24 | Query engine optimized using real-world datasets and queries. |

**User and Use cases:**

|  |  |
| --- | --- |
| User | Use cases |
| Developer - Software | Allow for scalability of the query engine for hospitals with big amounts of data. |

# SOFTWARE

## Algorithm Factory (AF)

### Workflow Engine: Woken

**Contributing task:** T8.1.2 Installation of RAW on local computing infrastructure for hospital analytics requirements EPFL  
**Description:** A local data hub is a computer cluster, that is deployed within the same country as the hospital and connected together via a secure network. The objective is to allow small hospitals to share IT infrastructure.  
**Dependencies:**

|  |  |  |
| --- | --- | --- |
| DATA | Hospital | Lille Hospital, Tel Aviv Hospital, Milano Hospital, Freiburg Hospital, CHUV Hospital |
| SOFTWARE | Data Factory (DF) | Data Anonymisation, Workflow Engine, Data Pipeline processes, Data Quality Processes, Data Storage, Data Integration, Data Categorization, Feature Engineering, HPC |
|  | Hospital Databases Bundle (HDB) | Local Database, Federated Query, Schema Mapping, Hospital Bundle Package |
|  | Algorithm Factory (AF) | Workflow Engine: Woken, Package of Algorithms as Docker images |
| SERVICES | Upgrade-Deploy-Release | MIP Integrated Releases Algorithm Factory |
|  | Security & Monitoring | Data governance |

**Releases:**

|  |  |
| --- | --- |
| Planned functionalities at M18 | Software extension to support provenance tracking through hospital hubs have been implemented. |
| Planned functionality at M12 | A secure procedure has been defined to connect a hospital to a hub. Related data management processes are also defined. |
| Planned functionalities at M24 | The software required by the procedure is developed, tested and packaged, ready to be used if necessary. |

**User and Use cases:**

|  |  |
| --- | --- |
| User | Use cases |
| Developer - Software | Small hospitals with restricted resources can still contribute to the human brain project. |

# SERVICES

## Upgrade-Deploy-Release

### MIP Integrated Releases Hospital Databases Bundle

**Contributing task:** T8.1.3 Installation and adaptation of SP8 bundle at local hospitals with upgrade support EPFL  
**Description:** This component will prepare and install the first working version of the FCDI (Hospital Bundle) at the participating hospitals in a bottom-up fashion. This effort includes going to hospitals, installing the software, understanding the network topology,configuring the data sources and getting the right permissions. It will also integrate new features as they become available in the other tasks of WP8.1 into the FCDI.  
**Dependencies:**

|  |  |  |
| --- | --- | --- |
| SOFTWARE | Data Factory (DF) | Workflow Engine |
|  | Hospital Databases Bundle (HDB) | Local Database, Federated Query, Schema Mapping, Hospital Bundle Package |
|  | Algorithm Factory (AF) | Workflow Engine: Woken |
| SERVICES | Upgrade-Deploy-Release | Micro-services |

**Releases:**

|  |  |
| --- | --- |
| Planned functionalities at M18 | Continuous process |
| Planned functionality at M12 | Continuous process |
| Planned functionalities at M24 | Continuous process |

**User and Use cases:**

|  |  |
| --- | --- |
| User | Use cases |
| Developer - Software | Base deployment infrastructure of the hospital bundle. |