

## HealthCare 4.0

### How to enable process interoperability

#### Levels of Interoperability

- **Functional Interoperability:** Data can be transferred from one system to another system. The received data can't be interpreted by the receiving system.
- **Structural Interoperability:** Data is transferred based on a standardized message format, but since the content of a structured message may not be standardized, higher levels of understanding between systems is typically impossible.
- **Semantic Interoperability:** The ability of systems to both exchange and use the information that has been transmitted. The structured message contains standardized, coded data. This allows the receiving HIT system to interpret the data.
- **Business Process Interoperability:** Enables business processes of different systems and/or organizations to work together. It defines the degree to which the integrity of workflow processes can be maintained between systems

#### Achieving Process Interoperability

- Modern communication standards like **HL7 FHIR** alone can only achieve the level of **Semantic Interoperability**. To get to the level of **Business Process Interoperability** a communication standard has to be complemented by a standardized way to formalize and exchange business processes.
- **BPMN** is a standard for specifying business processes which can be used to analyze the structure and the location of information exchange between different systems in a distributed process. In the next step these BPMN models can be automated using a business process engine and a modern communication standard like HL7 FHIR.
- **DMN** is a standard for describing and modeling repeatable decisions within organizations to ensure that decision models are interchangeable across organizations or systems. It also helps to separate decision logic from the process structure – so a modification in the decision logic of a process is independent from the process structure itself.

