

Semantic PACS – Concept, Benefit and Implementation illustrated by *SeDI*

Requirements on more interoperability of traditional PACS systems are steadily rising in the last years. There are many reasons for this trend: the development and distribution of specialized clinical applications, especially in the field of oncology, demands lots of clinical data. Traditional PACS systems deliver mainly medical images but don't allow querying non-image data: e.g. there are often only proprietary (non-standard) solutions available for querying radiotherapy data such as RT Struct, RT Plan and RT Dose. Also there is the demand for cloud-based solutions which are capable of offering diagnosis and therapy options in addition to pure archiving of clinical data. Furthermore it is clinical research which requires access to clinical data of healthcare centers and hospitals worldwide.

The first part of this presentation shows concept and benefit of Semantic PACS systems which offer a solution for the demands above. It explains how to link between DICOM meta data (of a traditional PACS) with non-DICOM data (of one or more clinical applications) uniquely by way of semanticisation. It then shows how to query such semanticised clinical data with SPARQL. *SeDI* is used show the implementation. *SeDI* is the first Semantic PACS designed for medical use.

The second part of the presentation offers some insights in the development of *SeDI* as a medical product. It shows our experiences with developing software according to IEC 62304, the international standard for *Medical device software – Software life cycle processes*. It illustrates the benefits of our seamless integration of development process (Continuous Integration) and project management (SCRUM).