

Ontology-Driven Generation of Radiation Protection Procedures

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Abstract : In this article, we present the principle and suitable methodology for the design of a medical ontology that highlights the radiological and dosimetric knowledge, applied in diagnostic radiology and radiation-therapy. Our ontology, which we named «Onto.Rap», is the subject of radiation protection in medical and radiology centers by providing a standardized regulatory oversight. Thanks to its added values of knowledge-sharing, reuse and the ease of maintenance, this ontology tends to solve many problems. Of which we name the confusion between radiological procedures a practitioner might face while performing a patient radiological exam. Adding to it, the difficulties they might have in interpreting applicable patient radioprotection standards. Here, the ontology, thanks to its concepts simplification and expressiveness capabilities, can ensure an efficient classification of radiological procedures. It also provides an explicit representation of the relations between the different components of the studied concept. In fact, an ontology based-radioprotection expert system, when used in radiological center, could implement systematic radioprotection best practices during patient exam and a regulatory compliance service auditing afterwards.

Keywords : knowledge, ontology, radiation protection, radiology

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