The Technology Research Institute b<>com invites candidates to send applications for a Ph.D. position.

Making image content explicit is essential with regards to medical decision (diagnosis, treatment, follow-up), data management and data secondary use (e.g. for biomedical research and assessment of care delivery). The notion of structured report addresses such needs, and is covered in the DICOM standard by the so-called "Structured reporting" (SR) specification. This specification has been widely used in the context of CAD (Computer Assisted Detection) to represent the results of automated image analyses (CAD), but not so much in other domains, yet. The goal of this PhD work is to propose, implement and evaluate a generic framework for representing structured reports of imaging procedures, based on formal entities and relationships represented in ontologies. The added value expected from this work is to enable querying and reasoning on such structured reports, which is not possible with current DICOM SR reports, because: (1) the DICOM syntax and query services are not suited to navigation in SR content; (2) the DICOM SR "tree" (i.e. the relations between information nodes) does not bear any formal semantics; (3) coding systems in use are not integrated into a single consistent modeling framework. The work will rely on previous works in this area, e.g. : DICOM standard, AIM model (from the CaBIG project), ontologies from the NCBO, RSNA "Radiology reporting" initiative, as well as specific needs identified in the B-Com/Isimed project.

The PhD fellowship is funded by b<>com (http://b-com.com) which is a Technology Research Institute located in Brest, Rennes and Lannion (France).

This PhD thesis will be carried out under the supervision of B. Gibaud (research associate, INSERM) and located at b<>com in Rennes.

Expected qualifications:
 - Minimum MSc degree
 - Programming experience
 - Experience with electronic health records, DICOM standards.
 - experience on semantic web technologies also welcome (ontologies, RDF/RDFS, OWL)
 - Experience in developing medical imaging applications is desirable
Contact: Please send your resume to job@b-com.com