# IMPROVED MAMMOGRAM INTERPRETATION WITH AN ONTOLOGY-DRIVEN EDITOR AND MAMMOVIEWER - PRELIMINARY RESULTS

Teresa Podsiadły-Marczykowska[1], Anna Wróblewska[2], Artur Przelaskowski[2]

[1] Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Science, Warsaw, Poland

[2] Institute of Radioelectronics, Warsaw, Poland

**Abstract:**

Although mammography is a standard of reference for detection of early breast cancer, as many as 25% of breast cancers may be missed. To reduce the possibility of missing a cancer, the following methods and tools have been proposed: continuing education and training, prospective double reading, retrospective evaluation of missed cases, and use of computer-aided detection (CAD). The purpose of the reported work was to evaluate the usefulness and the potential of our aiding tools: an ontology driven editor for mammographic lesion description (MammoEdit) and a CAD-tool (Mammo Viewer) to enhance radiologist's diagnostic performance. To this end test sample of mammograms was analyzed twice, without and with aiding tools. The obtained data were analyzed using (ROC) analysis and Kappa statistics. Statistical analysis of the test data demonstrated potential of both tools to enhance radiologist's diagnostic performance.

**Keywords:** radiological interpretation, ontology, diagnostic accuracy, computer-aided diagnosis