MONITOR QUALITY ASSURANCE USING A VARIABLE PATTERN: A MULTI-CENTRE STUDY

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In a digital radiology department, medical images are no longer being visualised on film and viewing boxes (hardcopy) but on high-end display devices (softcopy viewing). To maintain the highest quality of diagnostic reading, a careful daily quality control procedure of these display devices should be carried out. This is especially true in breast cancer screening programmes. Several protocols (AAPM TG18, DIN 6868-57, EUREF) to assure this quality exist but they all suffer from their static nature and their implementation limitations in current clinical practice. During the past years, we developed a new approach to simplify the task of daily quality control of display devices and to increase the reliability of the evaluation results. This newly developed procedure (MoniQA) consists out of a software framework written in JAVA and variable, physical test patterns.
In this paper, we will report on the first results of a multi-centre study which we have performed throughout the past year. We will discuss the various quality control routines used in the different centres and we will also describe the developed software infrastructure to automate the process of quality control. Several other novel methods to check for the influence of external factors diminishing the apparent image quality (ambient light levels, viewing angle issues), will be discussed.
We believe that the described solutions will simplify the process of quality control and by that increase or consolidate the trust radiologists have in their clinical findings.

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