

OPTIMAGE – CENTRAL ORGANISED IMAGE QUALITY CONTROL INCLUDING STATISTICS AND REPORTING

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Quality control of medical imaging systems - traditionally performed using phantom images, which are evaluated by human observers – is becoming more and more difficult and time consuming. Therefore, the evaluation of phantom images with adequate image processing software might help to save evaluation time and to receive more objective results.

The developed software package “OPTIMAGE” has a central approach for the evaluation of digital phantom images: On the one hand OPTIMAGE provides a framework, which includes special functions like automatic update, database integration and connectivity, DICOM data sources, image processing functionality and statistical components for reporting. On the other hand the test methods are implemented using modules: All of these modules are handled in the same way which simplifies the use of the software. Tests are currently available for the following modules: CR and DR systems both radiography and mammography, CT, nuclear medicine and MRI.

Every test is based on a test profile. This profile contains information about the used phantom, the acquisition parameters and the specific tested modality. Performing measurements with the software requires only a few working steps: After the selection of the images the profile has to be selected. Then the verification process checks if the phantom was positioned correctly and if the images were taken according to the correct technical parameters. An automatic analysis of the phantom images takes place. Final results are shown including a conclusion concerning whether the tested modality can be used or not in clinical practice. Results can be assessed and evaluated in a dedicated statistics area: visualisation options as well as an export of the data is available. The reporting functionality helps to report the performance of a result over time.

First feedbacks from users in Luxembourg and Germany show a great acceptance of the software, but it needs more tests in daily routine conditions in order to obtain more information about reference values. The available statistical functions and the reporting allow a fast and efficient overview of the acquired data.

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