Mammo Pro

The measurement of signal-difference-to-noise ratio (SDNR) is performed using the signal differences between the two regions contained in each step of the wedge. In order to facilitate the measurements, the software MammoPro (QUART GmbH, Zorneding, Germany) has been designed for the automatic evaluation .

Afterwards, the user indicates the location of the center and one edge of the wedge, which the software uses to draw 12 ROIS, each one of them centered in each of the twelve wedge steps. For each step, the software automatically selects an ROI size of 7 x 7 mm in each homogeneous region, which provide x_1, x_2 and the corresponding standard deviations. This size ensures that only pixels from the given region are included, and also avoids including the Landolt rings. However, this ROI size can be varied within the software if desired.

Fig. 1.a. SDNR determination in all steps

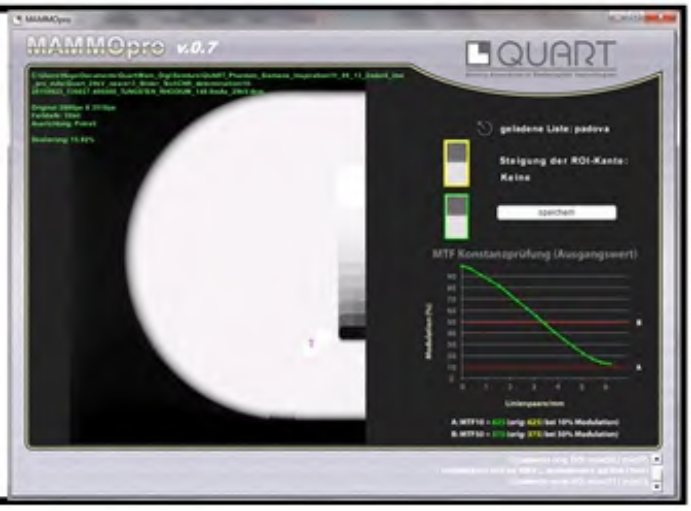

Fig. 1.b. MTF determination

In addition, the software enables the determination of Nyquist frequency and modulation transfer function (MTF) using a high attenuating object (a brass square) placed at the top of the phantom. The transition between PMMA and brass is measured and Fourier transformed to obtain the MTF. QUART has developed and tested an algorithm that is independent from the pixel sampling process. However, this algorithm still needs to be transformed into a user-friendly program code.