Title (en)

METHOD AND SYSTEM FOR USING BREAST ULTRASOUND INFORMATION TO FACILITATE BREAST CANCER SCREENING

Title (de)

METHODE UND SYSTEM ZUR VERWENDUNG VON BRUSTULTRASCHALLINFORMATIONEN ZUR ERLEICHTERUNG VON BRUSTKREBSVORSORGEUNTERSUCHUNGEN

Title (fr)

PROCEDE ET SYSTEME PERMETTANT DE SE SERVIR D'INFORMATIONS D'ULTRASONS MAMMAIRES POUR FACILITER LA VISUALISATION DU CANCER DU SEIN

Publication

EP 1347708 A2 20031001 (EN)

Application

EP 01987010 A 20011119

Priority

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- US 25294600 P 20001124

Abstract (en)

[origin: WO0243801A2] A breast cancer screening system having an ultrasound probe (202)that scans a breast (204) that is flattened along an ultrasound-absorbing plate (206). The ultrasound probe (202) takes ultrasound image slices from successive planes in the breast (204) volume substancially parallel to a plane of a predetermined x-ray mammogram view of the breast (204). The ultrasound image slices are preferably displayed adjacent to a display (406) of the x-ray mammogram view itself, such that a screening radiologist may elect to view the ultrasound image slices simultaneously with the x-ray mammogram view. Preferably, the predetermined x-ray mammogram view is a standardized x-ray mammogram view such as the craniocaudal view or mediolateral oblique view.

[origin: WO0243801A2] A breast cancer screening system having a display apparatus that simultaneously displays a succession of ultrasound image slices, the ultrasound image slices being taken from successive planes in a breast volume substantially parallel to a plane of a predetermined x-ray mammogram view of the breast, is described. The ultrasound image slices are preferably displayed adjacent to a display of the x-ray mammogram view itself, such that a screening radiologist may elect to view the ultrasound image slices simultaneously with the x-ray mammogram view. Preferably, the predetermined x-ray mammogram view is a standardized x-ray mammogram view such as the craniocaudal view (CC) or mediolateral oblique view (MLO). The screening system may also perform computer-aided diagnosis (CAD) algorithms on the ultrasound image slices and/or the x-ray mammogram view. A breast ultrasound adapter is also described for facilitating reliable acquisition of the breast ultrasound scans. The breast ultrasound adapter optionally comprises acoustic transducers for vibrating the breast tissue such that vibrational resonance information is acquired in addition to the primary ultrasound information. The vibrational resonance information is provided to the CAD system in conjunction with the primary ultrasound information and the x-ray mammogram information. Lesion features extracted from the vibrational resonance information are fed to a classifier, e.g. an artificial neural network, in conjunction with features extracted from the primary ultrasound information and the x-ray mammogram information. The x-ray mammogram, the ultrasound image slices, the vibrational resonance images, and the CAD output can be simultaneously displayed in selected combinations according to input commands from the user.

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