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(54) **Title:** LESION LOCALIZATION IN AN ORGAN

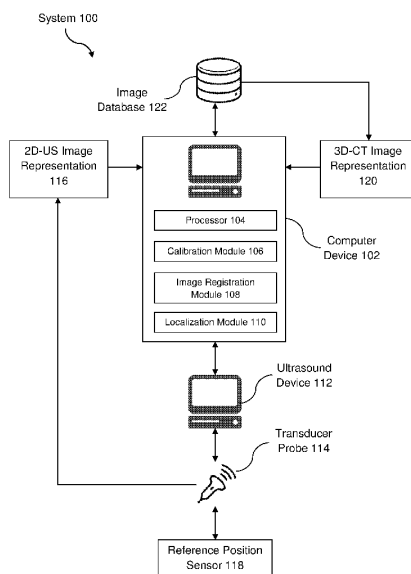


Figure 1

(57) **Abstract:** The invention relates to a computerized method (200) for localizing a lesion in an organ of a subject, comprises performing: a first image registration operation (400) for determining a rigid transformation matrix based on alignment of a two-dimensional ultrasound (2D-US) image representation (116) and a three-dimensional computed tomography (3D-CT) image representation (120) of the organ, the 2D-US image representation (116) acquired from a transducer probe (114); a second image registration operation (500) for refining the rigid transformation matrix based on image feature descriptors of the 2D-US and 3D-CT image representations (116, 120); and a localization operation (600) for localizing the lesion relative to the transducer probe (114) based on the refined rigid transformation matrix and a 3D-CT position of the lesion in the 3D-CT image representation (120). A system for performing the method is also disclosed herein. The system may further comprise an ablation apparatus for radio frequency ablation of the lesion.

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