

# Literature survey:

1) Professor. Helman I. Stern,

By the early 1990's scientists, surgeons and other experts were beginning to draw together state-of-the-art technologies to develop comprehensive image-guidance systems for surgery, such as the *Stealth Station*.<sup>3</sup> This is a free-hand stereo-tactic pointing device, in which a position is converted into its corresponding location in the image space of a high-performance computer monitor. In a setting like the OR, touch screen displays are often used, and must be sealed to prevent the build-up of contaminants. They should also have smooth surfaces for easy cleaning with common cleaning solutions. These requirements are often overlooked in the busy OR environment.

2) Professor. Angelini E,

Fetal dosimetry studies require the development of accurate numerical 3D models of the pregnant woman and the fetes. This paper proposes a 3D articulated fetal growth model covering the main phases of pregnancy and a pregnant woman model combining the utero-fetal structures and a deformable non-pregnant woman body envelope. The structures of interest were automatically or semi-automatically (depending on the stage of pregnancy) segmented from a database of images and surface meshes were generated. By interpolating linearly between fetal structures, each one can be generated at any age and in any position. A method is also described to insert the utero-fetal structures in the maternal body. A validation of the fetal models is proposed, comparing a set of biometric measurements to medical reference charts. The usability of the pregnant woman model in dosimetry studies is also investigated, with respect to the influence of the abdominal fat layer.