

Figure 1: Theoretically ideal body composition measurement model

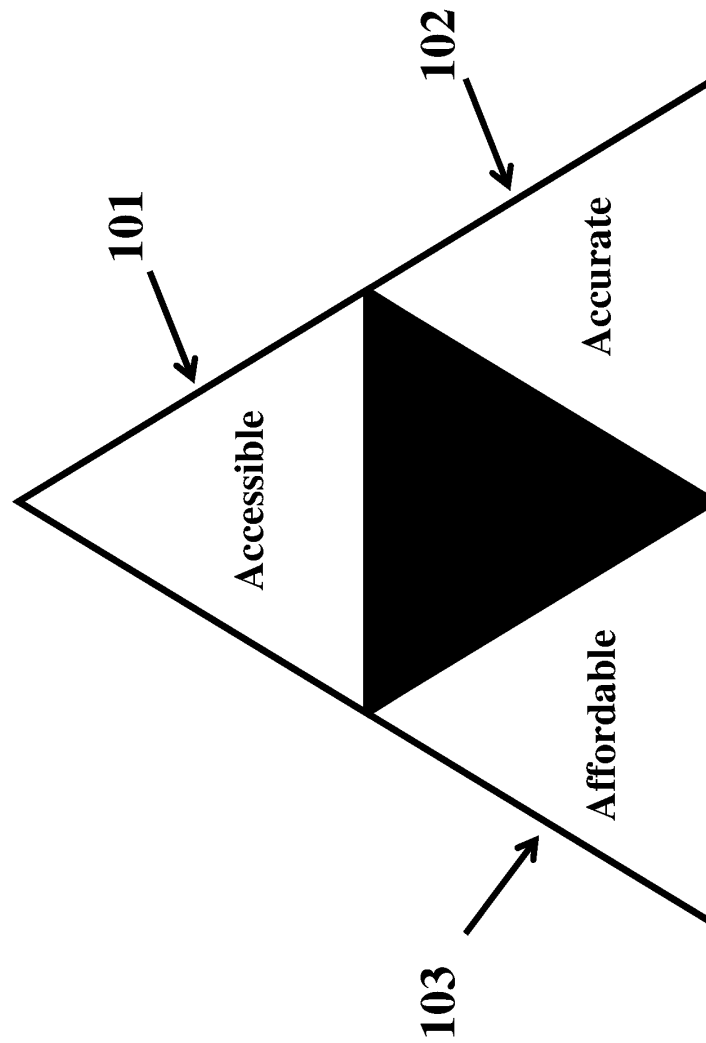
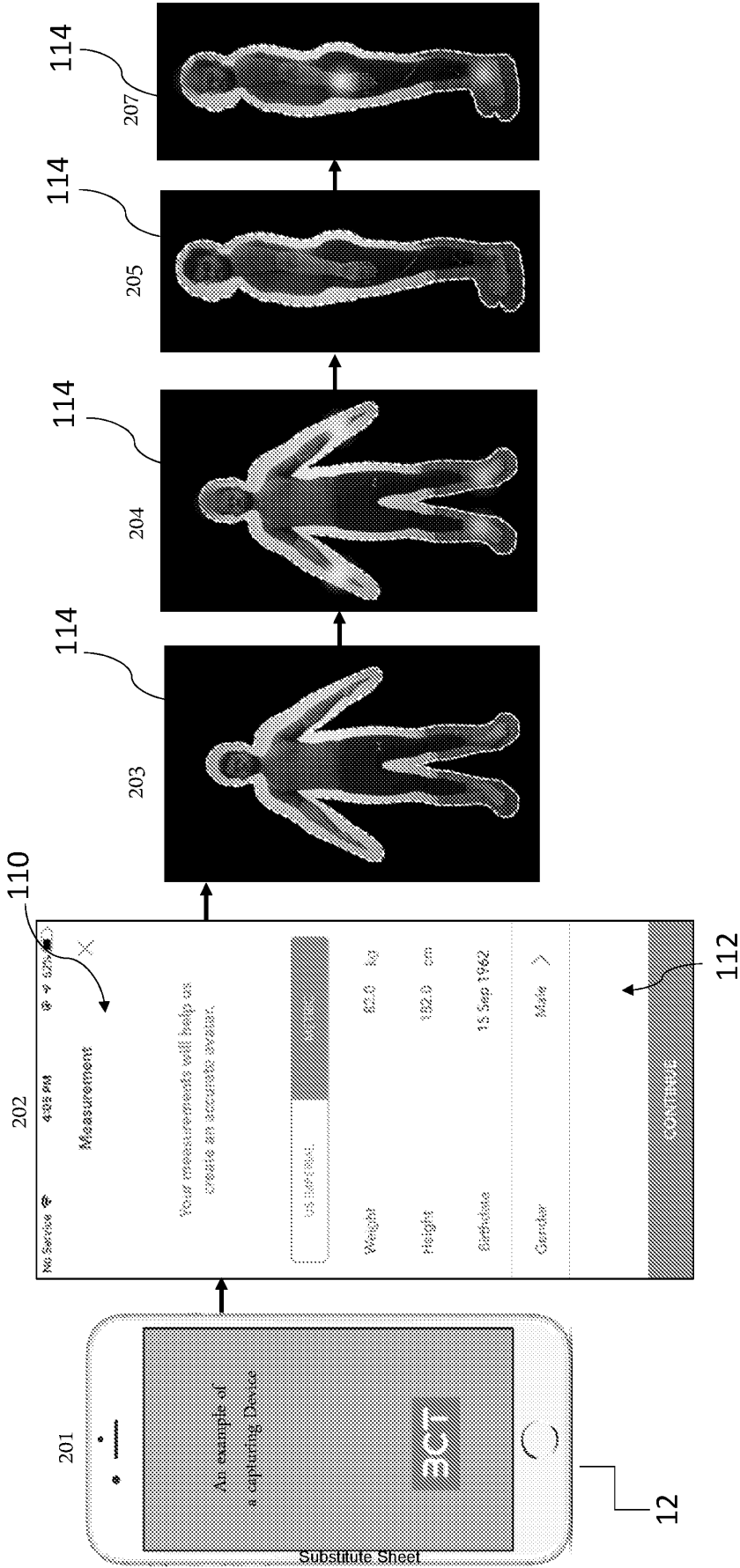


Figure 2: Overview of system comprising a device to estimate body composition & health & wellness risks from human imagery



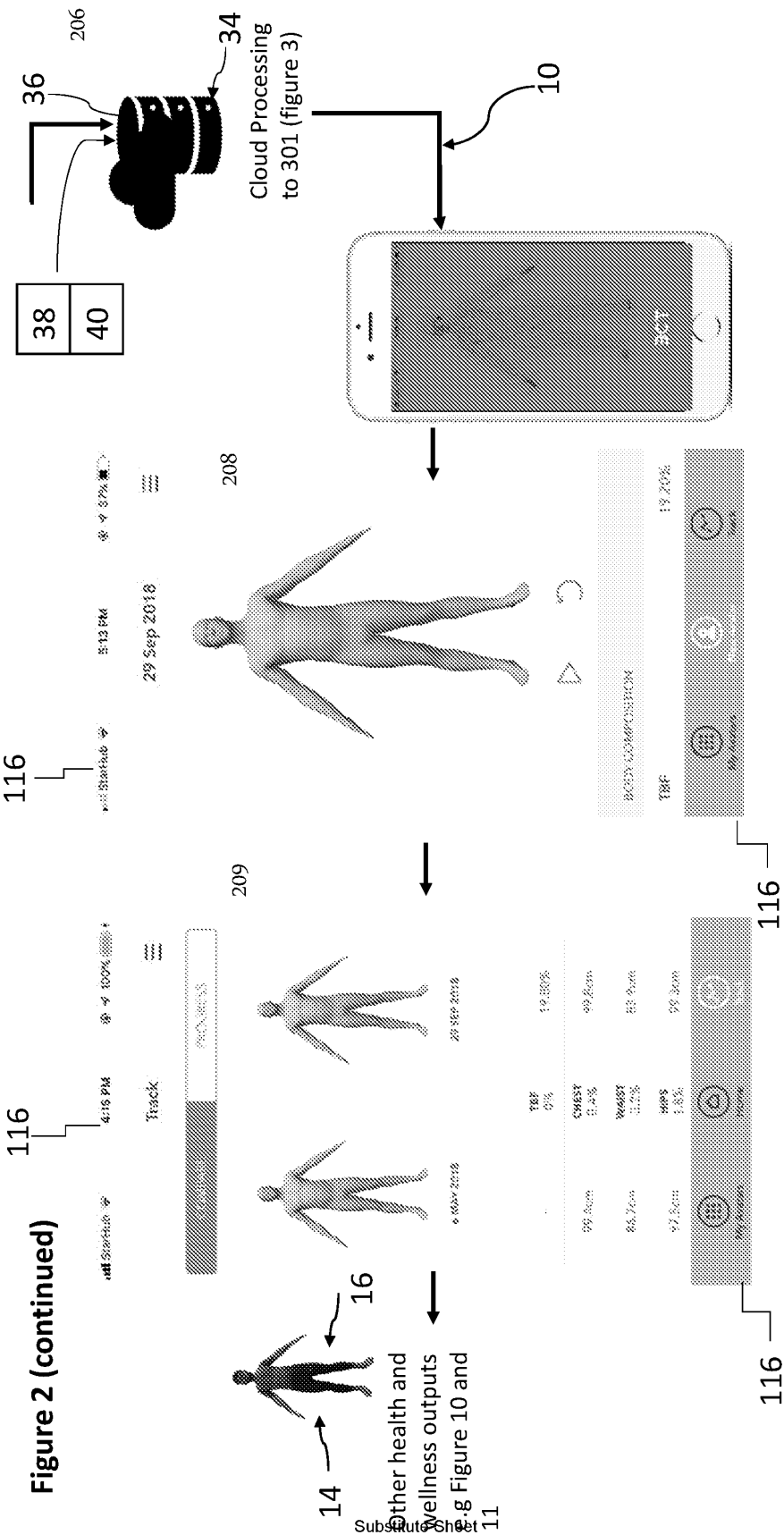
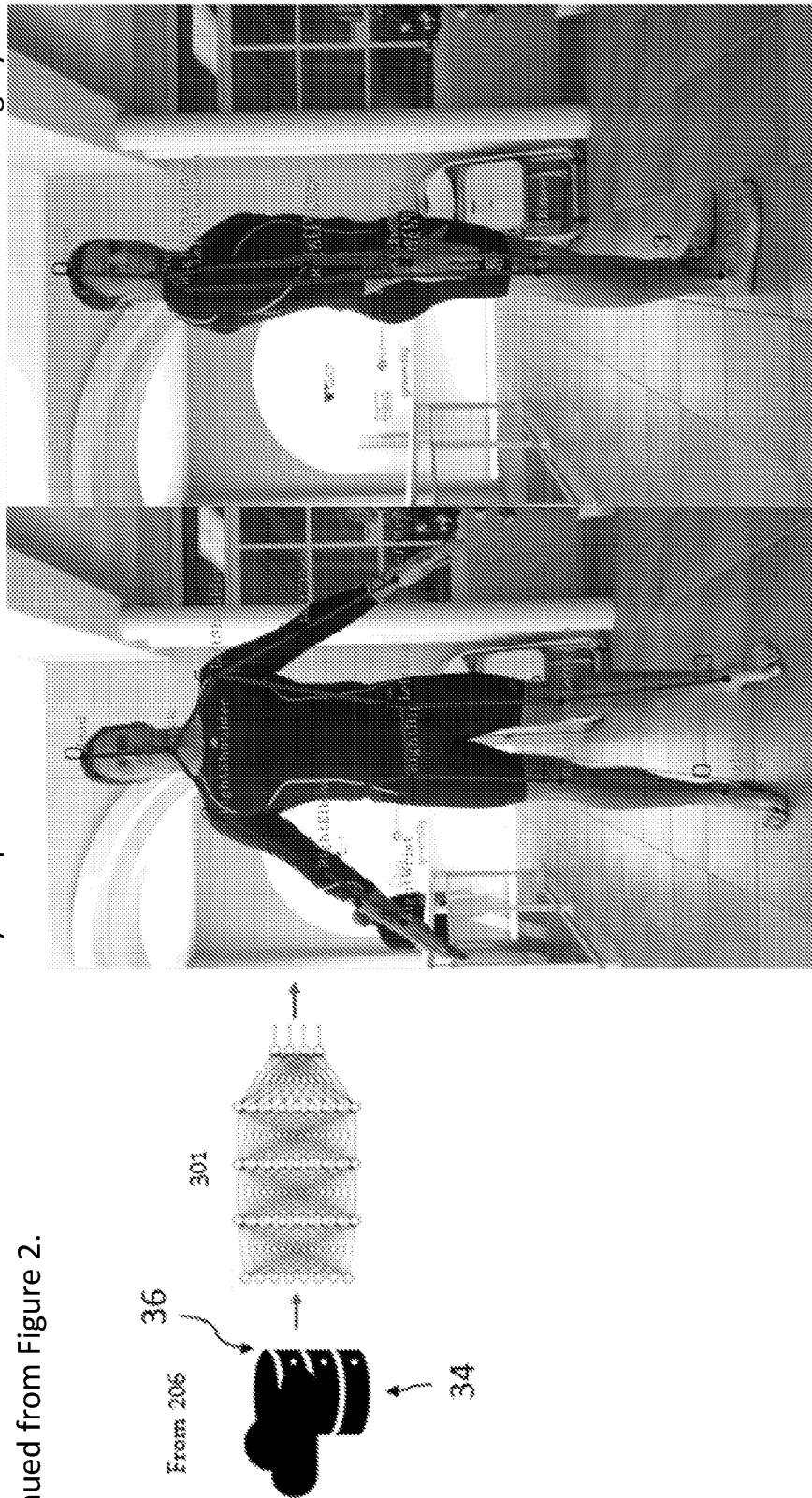
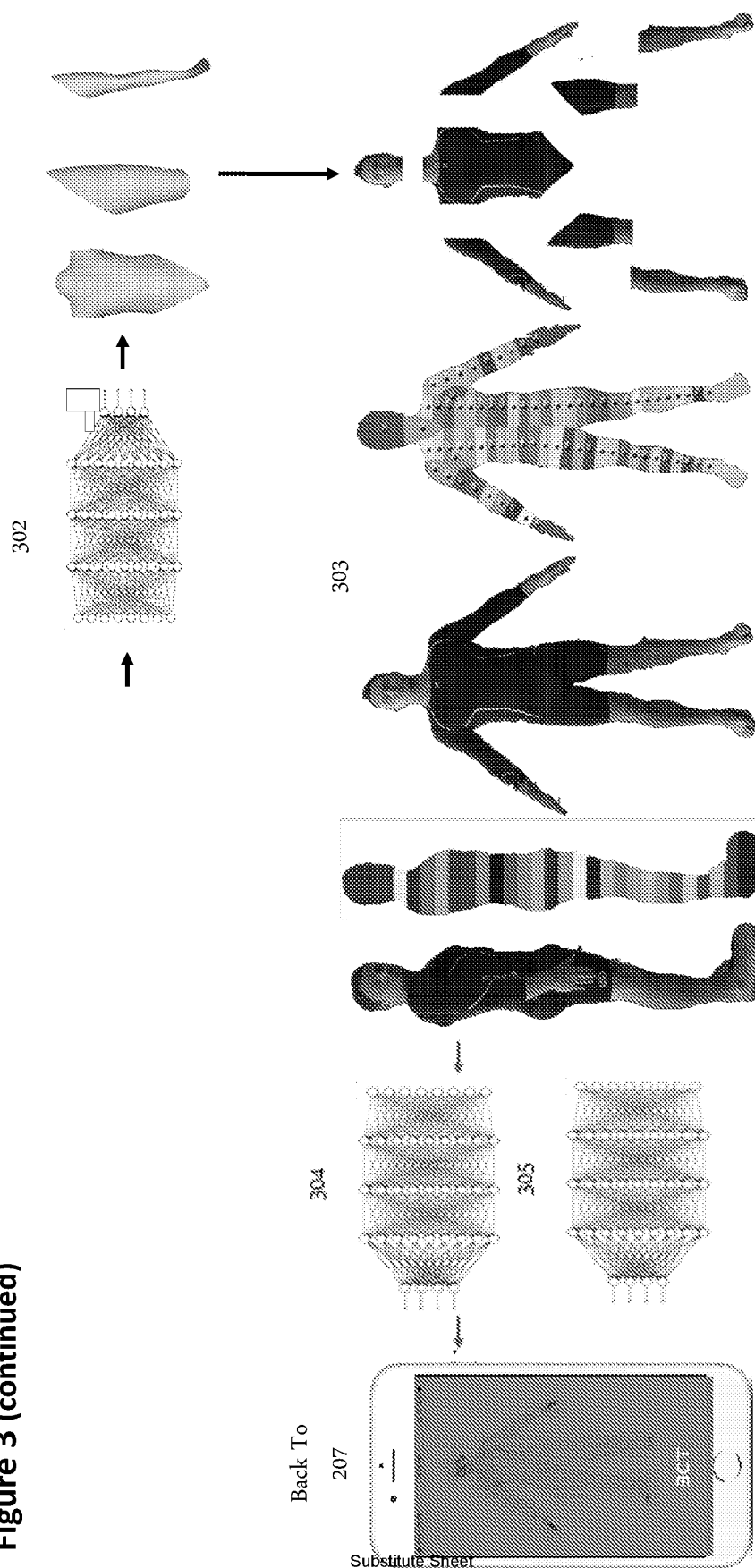


Figure 3 Overview of device to estimate body composition and health & wellness risks from human imagery
Continued from Figure 2.





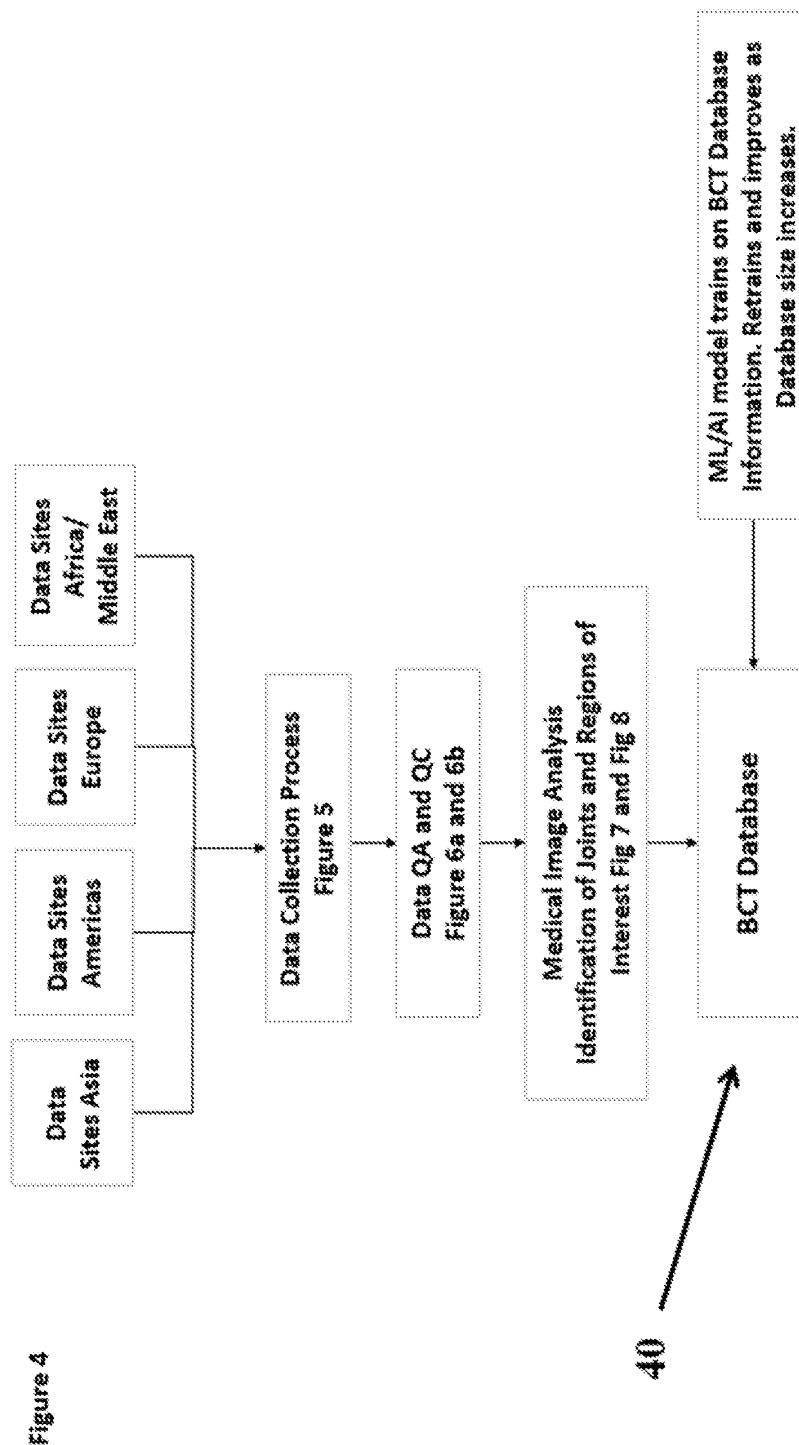
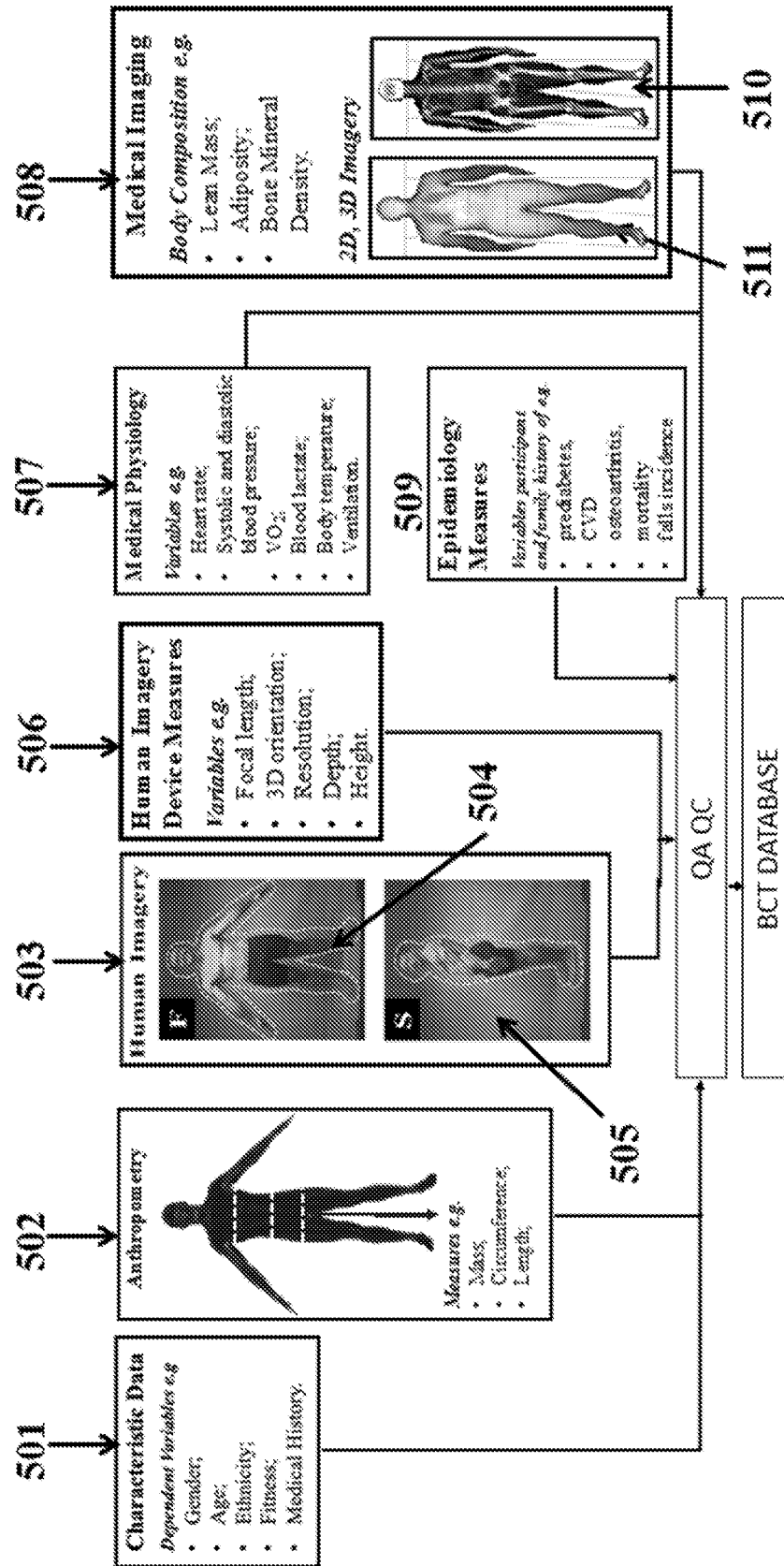


Figure 5: BCT Database Data Collection Overview



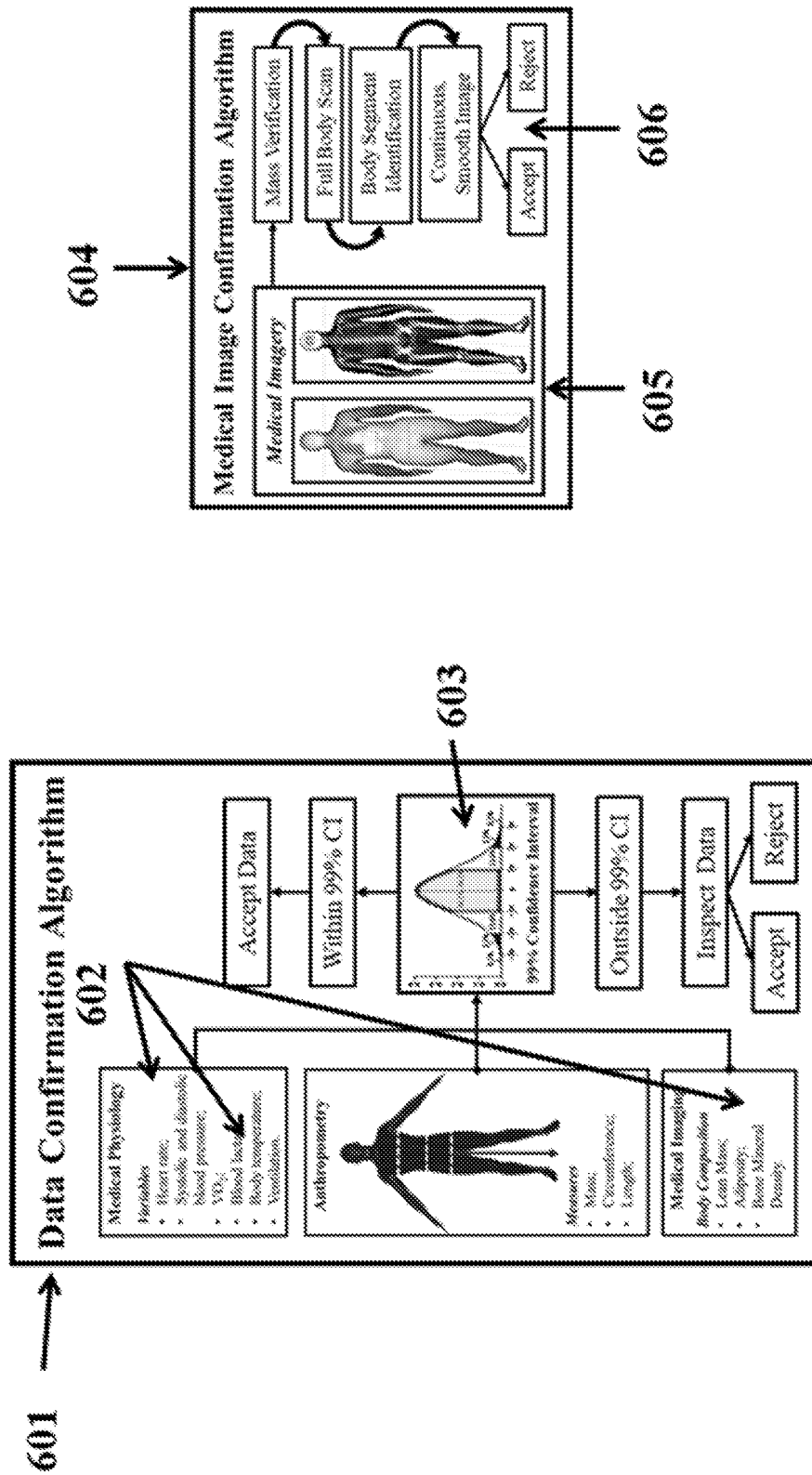


Figure 6a General overview of data, medical imagery and human imagery quality control procedures

Figure 6b: General overview of data, medical imagery and human imagery quality control procedures

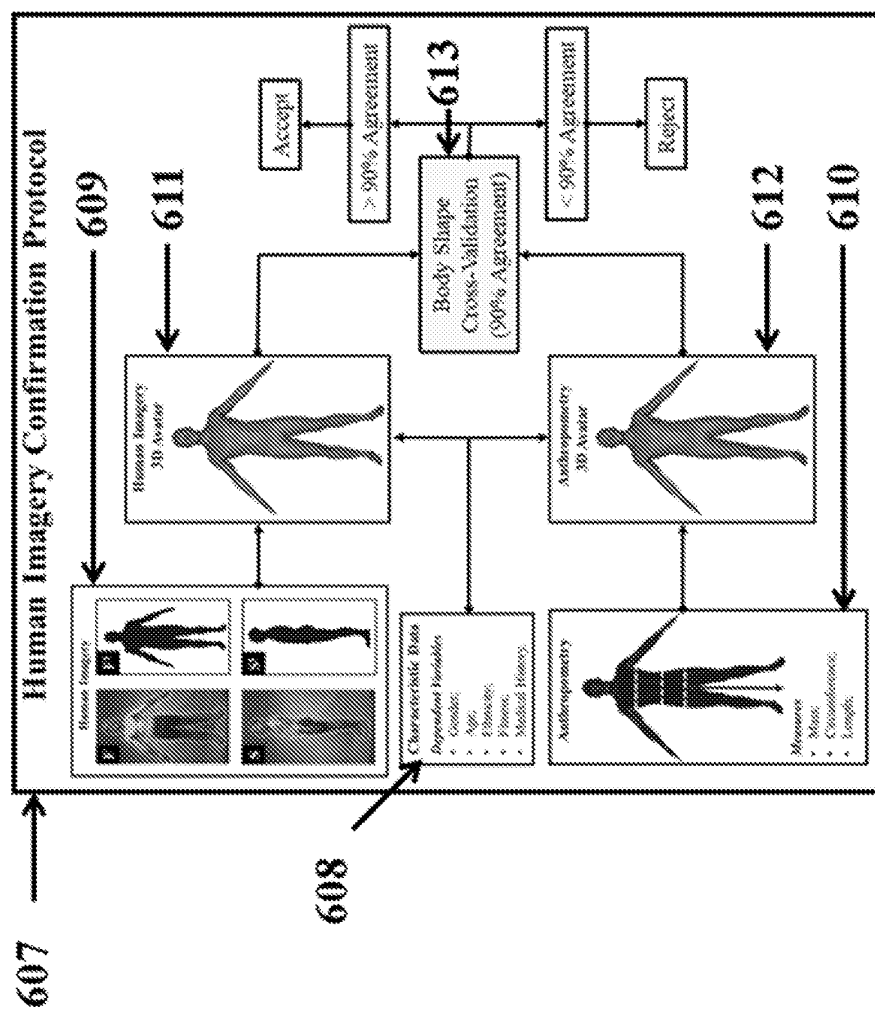
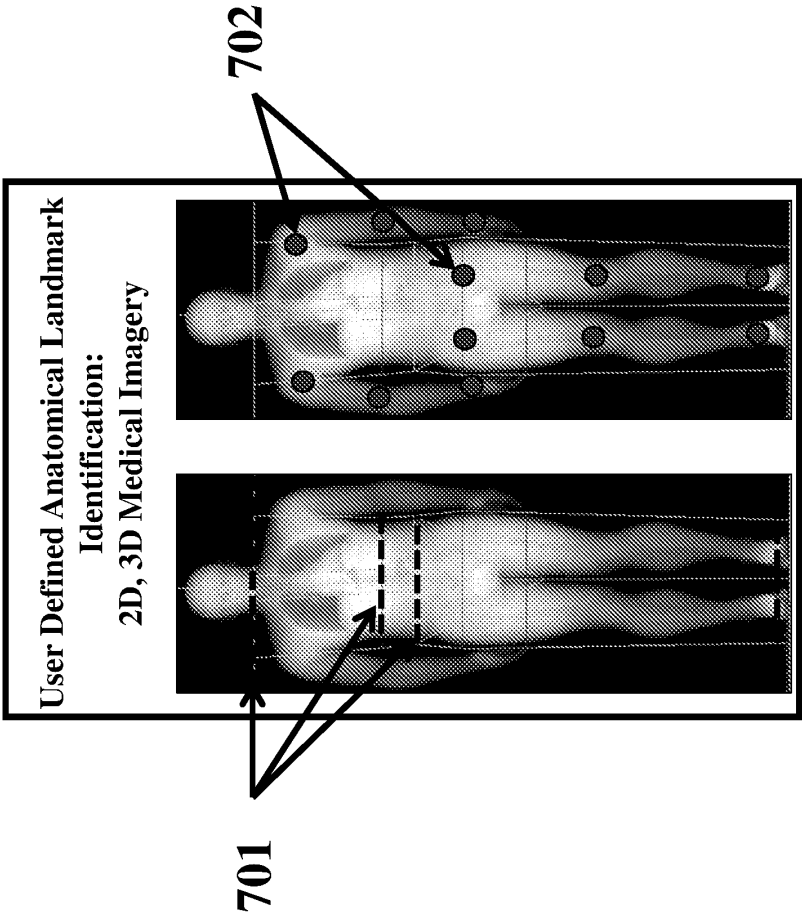


Figure 7: General overview of user defined anatomical landmark identification process.



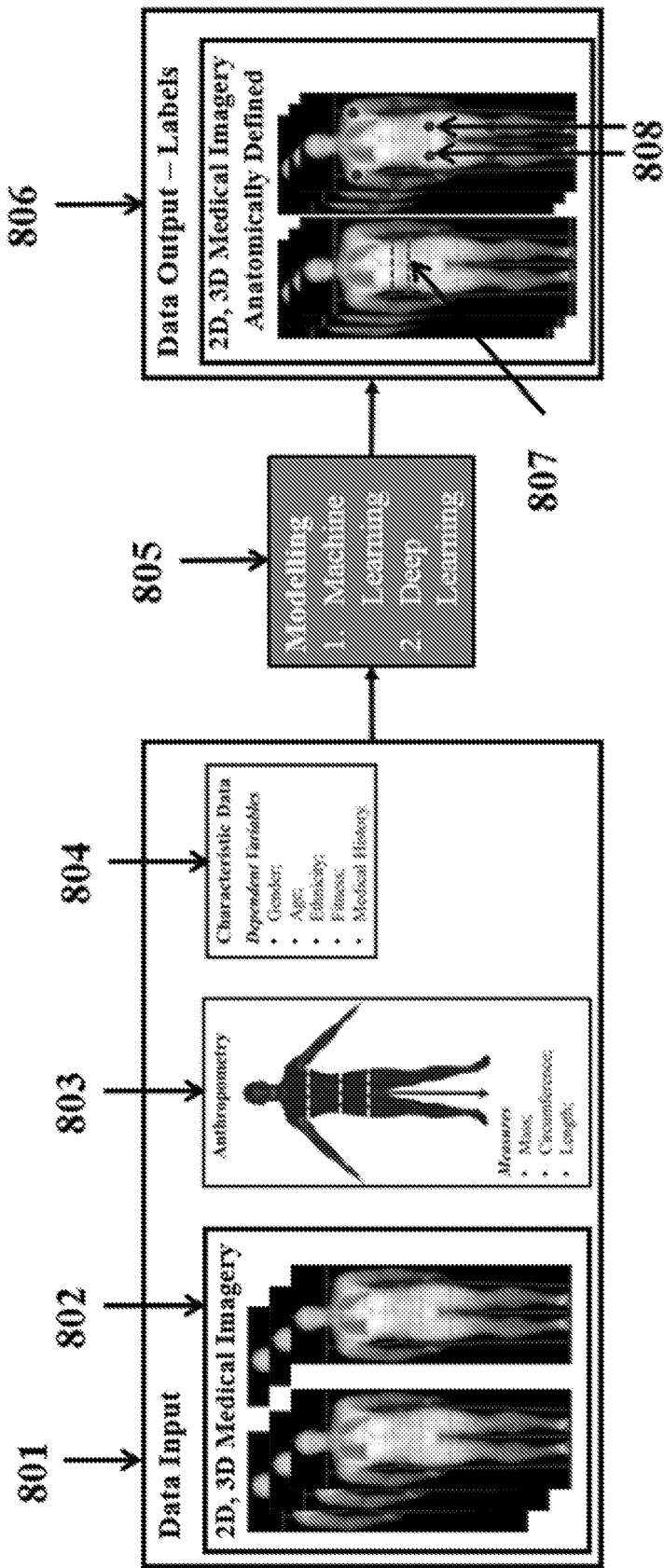


Figure 8: General overview of automated deep neural network for defining anatomical landmarks within medical images. Joint centres are identified with red dots, region lines with red dotted lines.

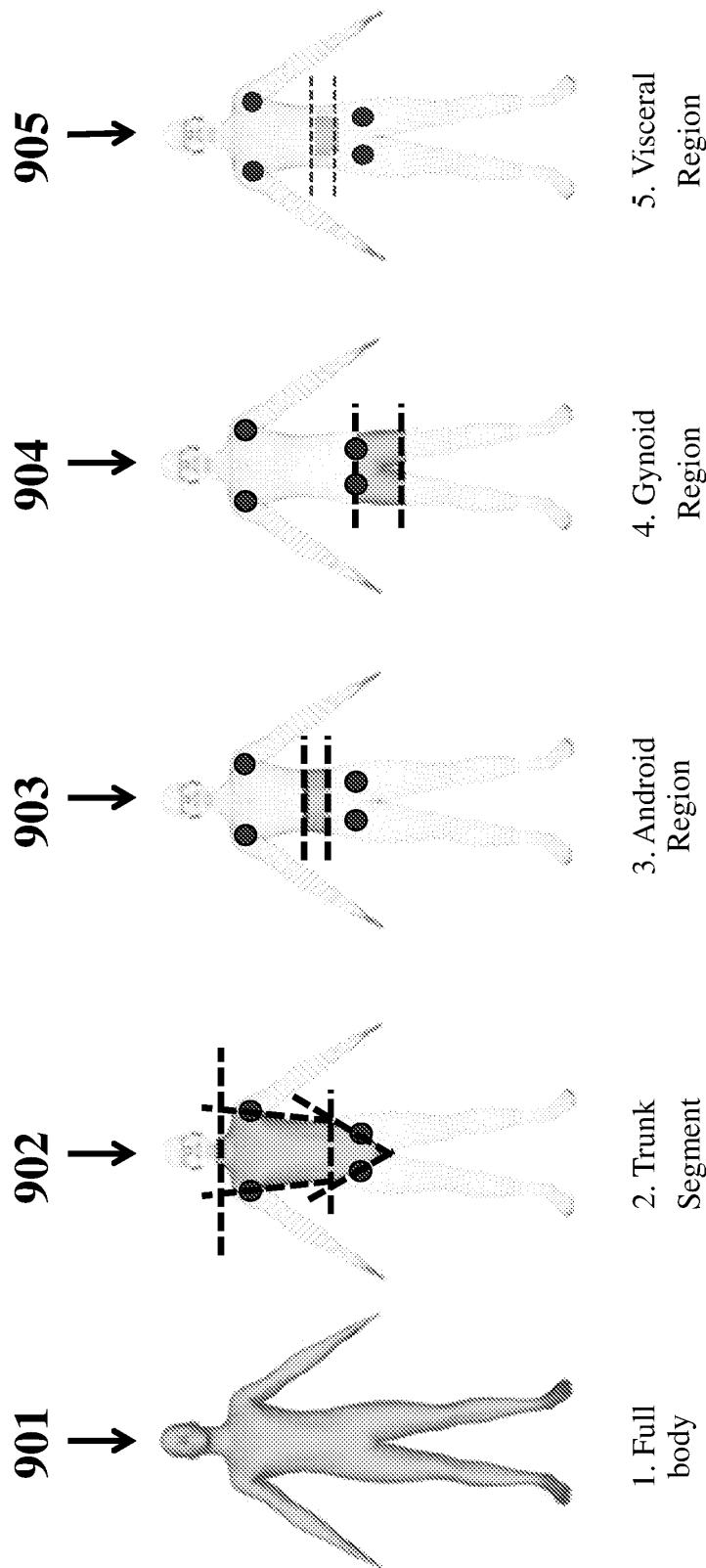
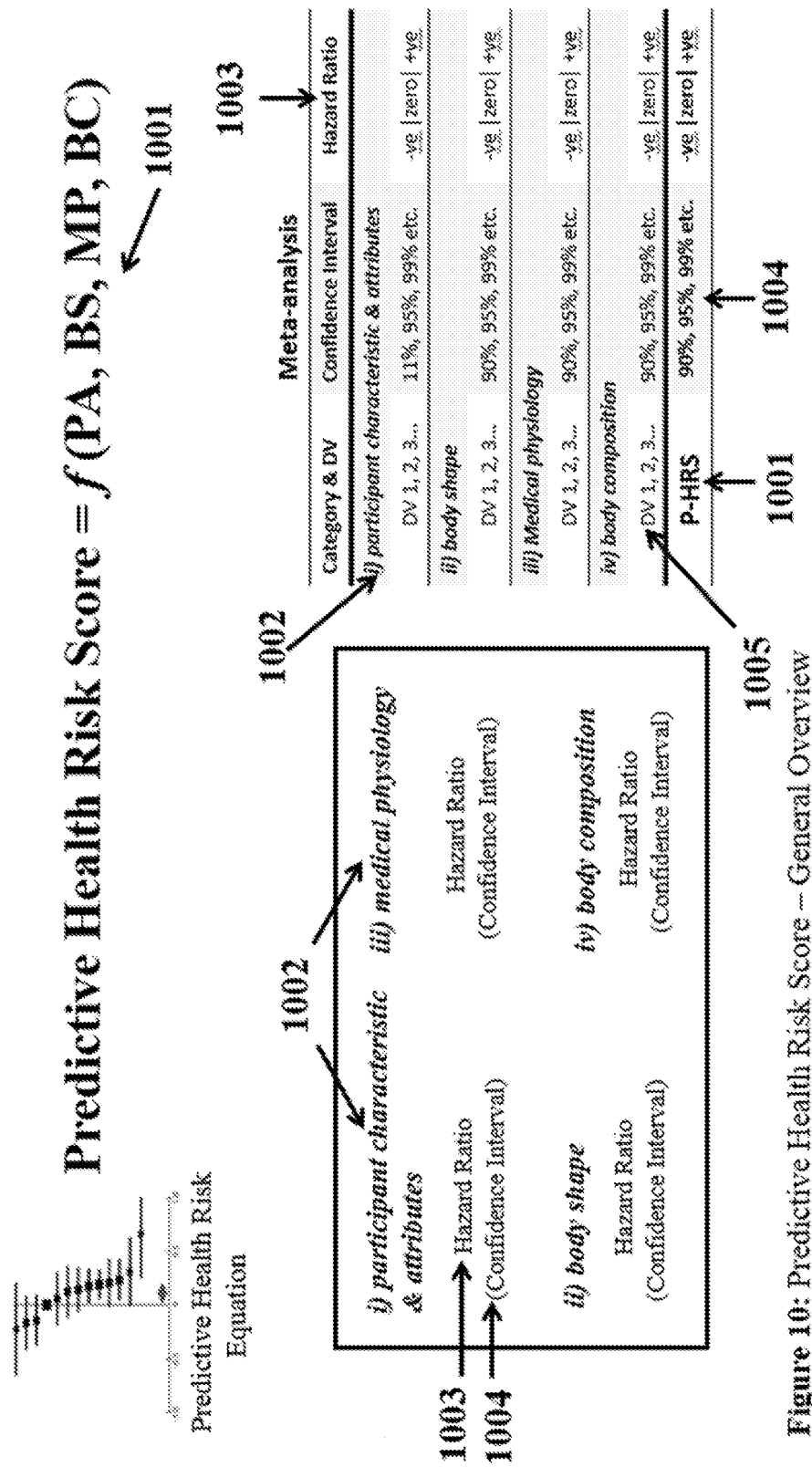
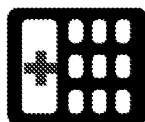


Figure 9: General overview of anatomical landmarks registered within participant specific 3D shape. Region lines indicate segmentation region. Joint centre positions assist the AI/ML model in the definition of region lines.



Relative Health Risk Score = $f(\text{PA, BS, MP, BC})$



Relative Health Risk Calculator

iv) *body composition*

iii) *medical physiology*

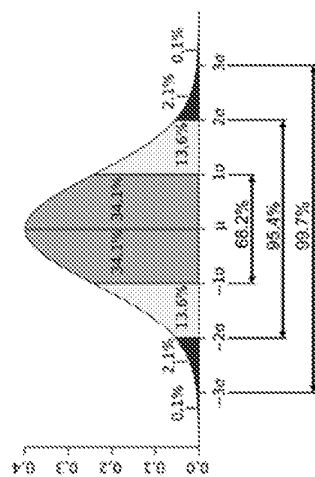
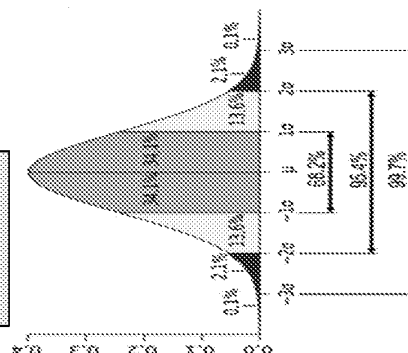
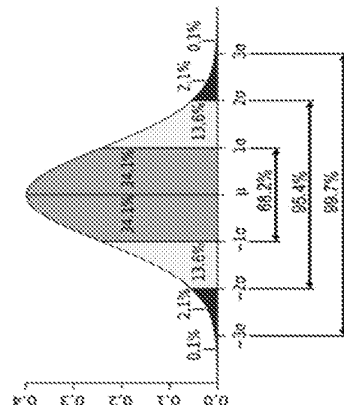
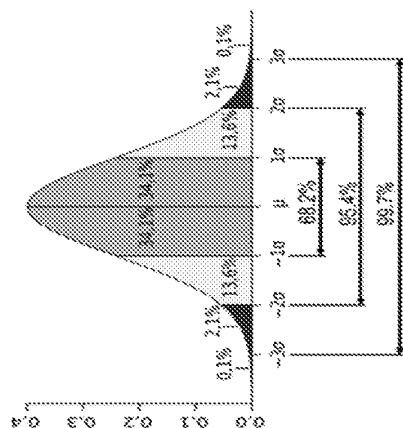
ii) body shape

i) participant characteristic & attributes

Score

Score

Score

Substitute Sheet
Rule 26 (RO/AU)

High Risk

High Risk

Moderate Risk

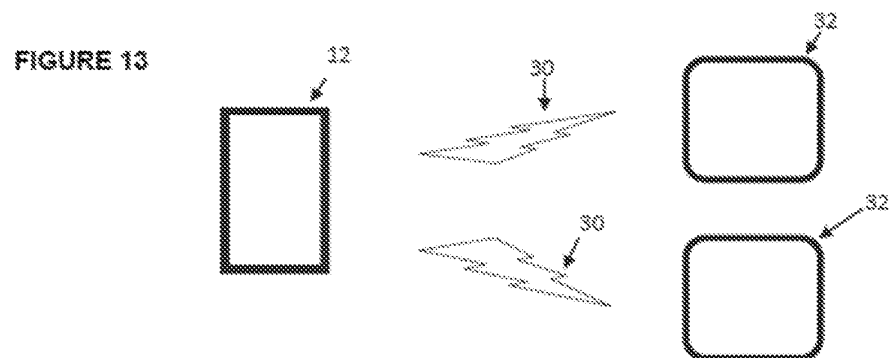
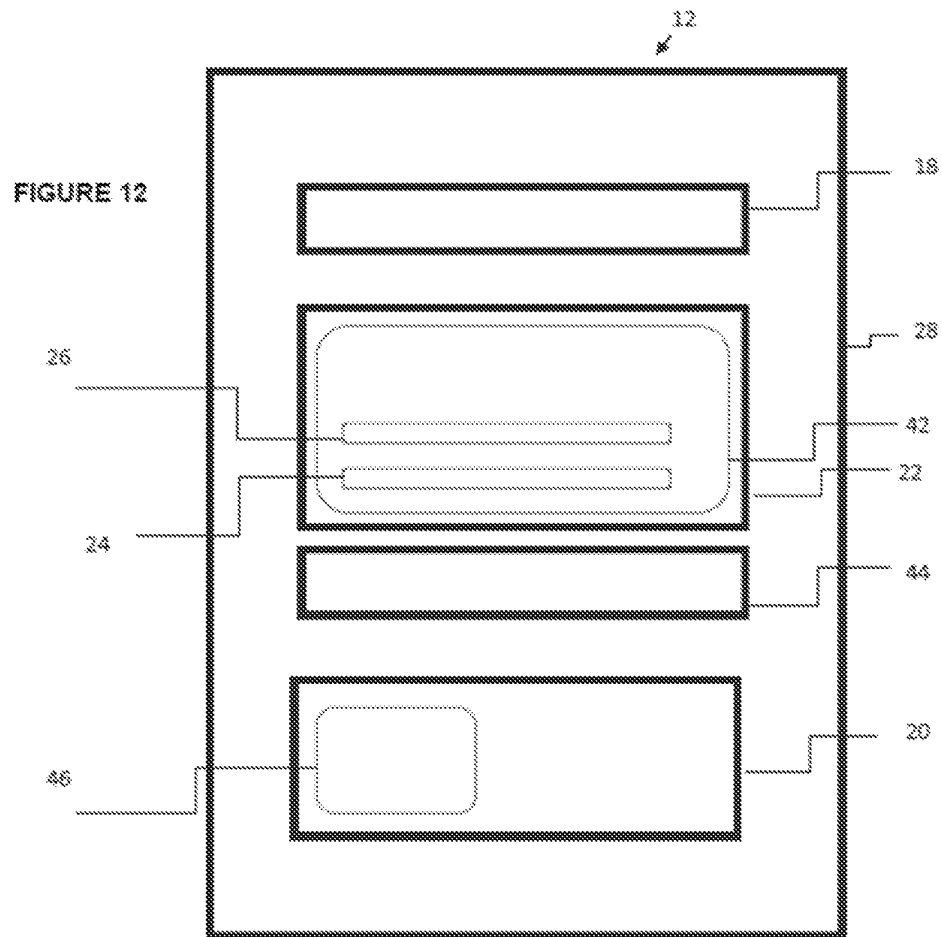
Low Risk

Maximum

Minimum

Example Cumulative Health Risk Score

Figure 11: Relative Health Risk Calculator – General Overview



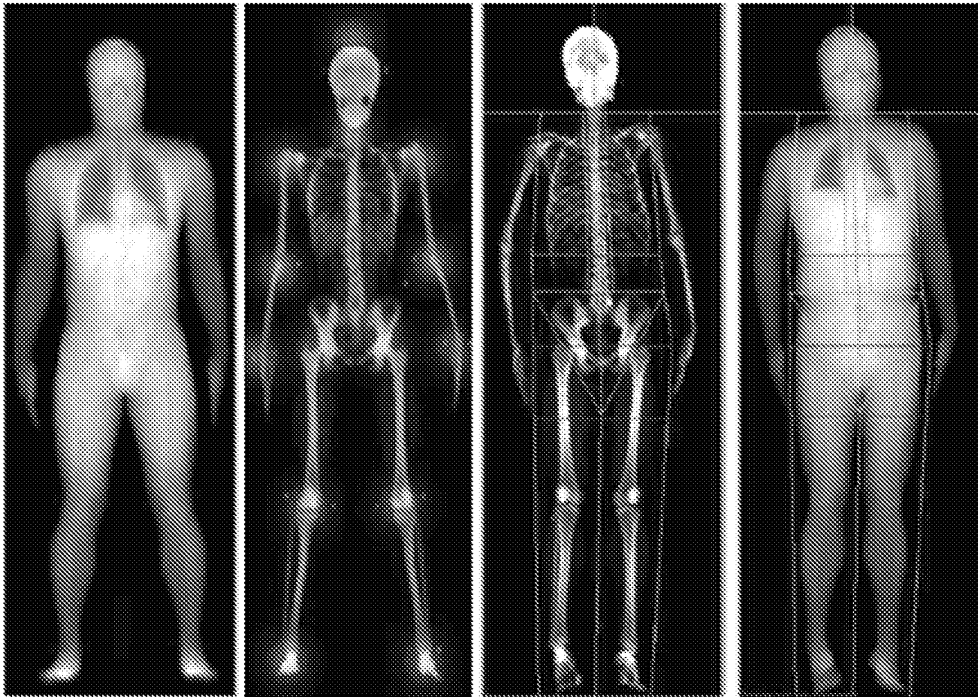


Figure 14a

Figure 14b

Figure 14c

Figure 14d

Diagram Showing Estimated Joint Centres



Figure 15a

Figure 15b

An example of body part segmentation without the use of joints estimated based on medical imaging

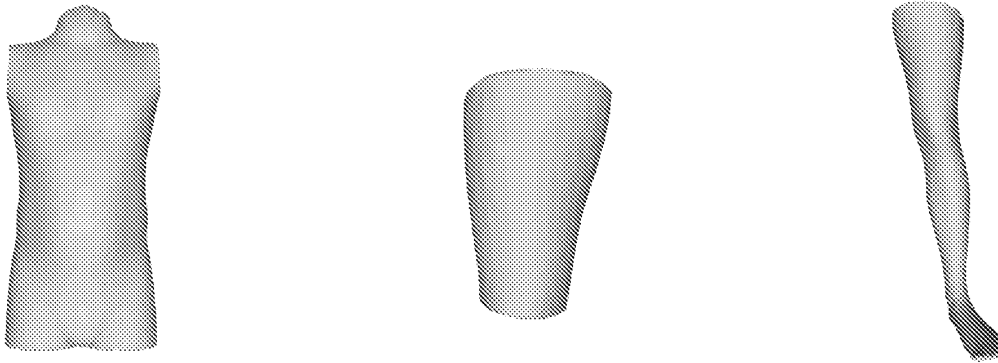


Figure 16

Example Body Part Segmentation using estimated anatomical landmarks and joints.

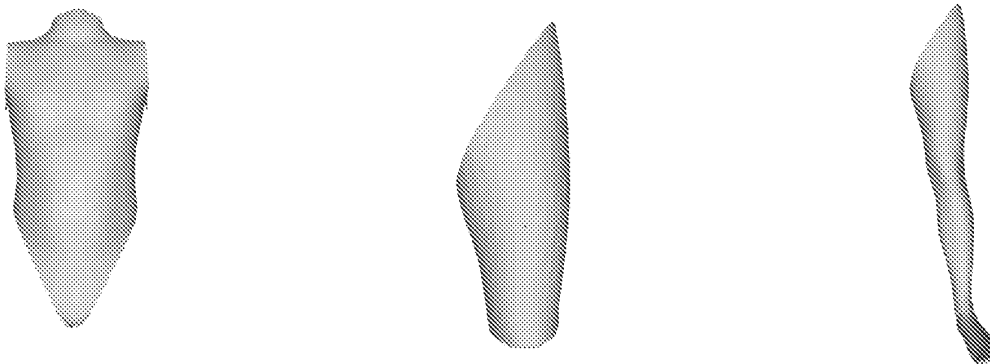


Figure 17

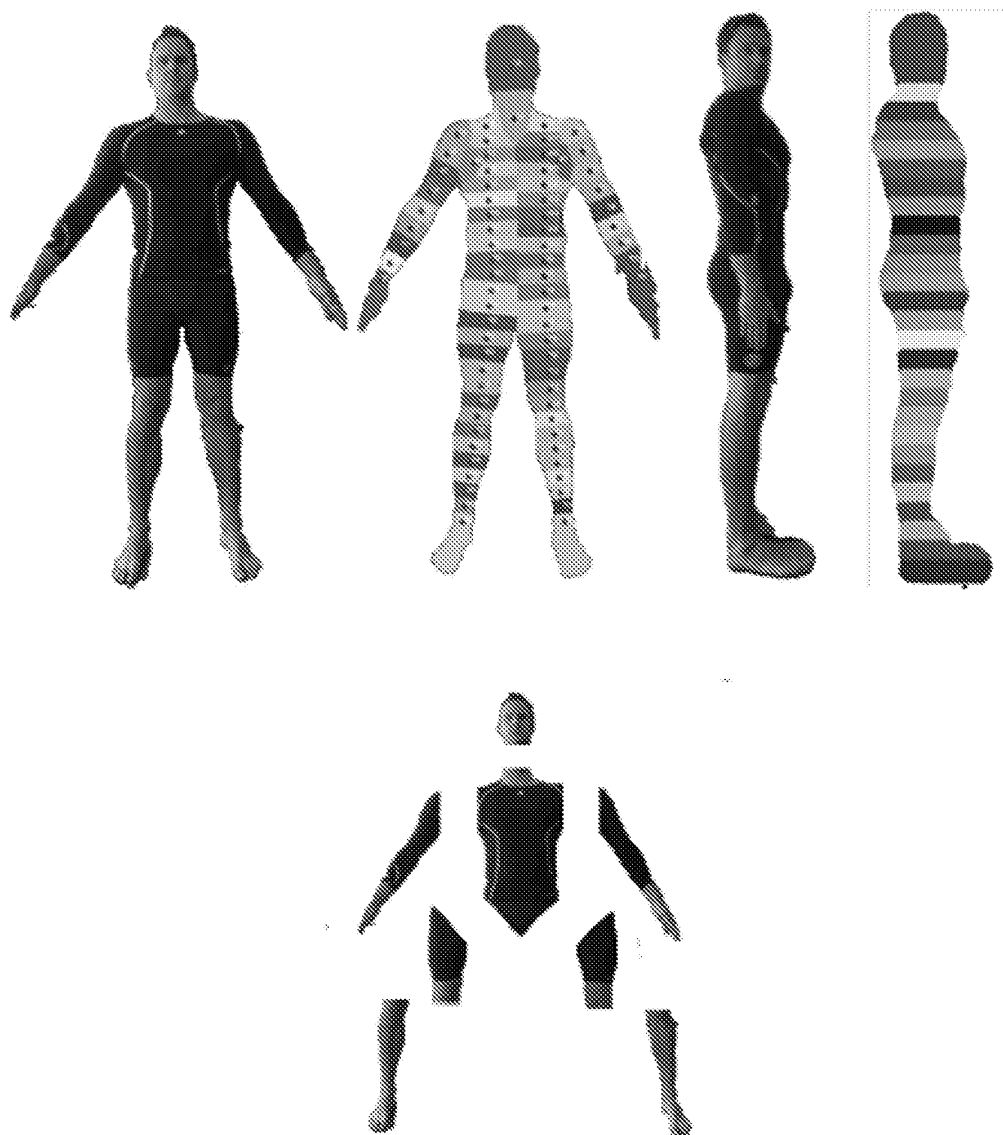


Figure 18