extract as fig1.eps
The location of eight sensors A–H

8-Sensor positions:
1 on the head
1 at the pelvic
1 each on both palms
PLUS
1 each on both ankles
1 each on middle of both upperarms
Tranmitter T1

Sensors 1–4 are read by transmitter 1
Sensors 5–8 are read by transmitter 2

extract as fig3.eps
Track sensors and send over the network. Use sensor values to set constraints for Jack Server. Jack server uses the constraints to define the posture of the Avatar. VR station picks Avatar information from the network; draws the avatar for display.

extract as fig4.eps
Track sensors and send over the network

VR station picks Avatar information from the network; draws the avatar for display

Avatar Server: Uses sensor values to define the avatar of the participant

y-up and inches

y-up and cms

z-up and inches

extract as fig5.eps
P(x, y, z)

4 by 4 matrix for the local-frame

\[
\begin{bmatrix}
R_x & 0 \\
R_y & 0 \\
R_z & 0 \\
P & 1 \\
\end{bmatrix}
\]

extract as fig6.eps
Animate Transform $M_i = \begin{bmatrix} S\text{-frame} * M_1 & \cdots & M_{i-2} * M_{i-1} \end{bmatrix}^{-1} * D\text{-frame}$

* => concatenate

extract as fig7.eps
15 (atlanto_occipital: bone in the skull)
6 (base of the neck)

extract as fig8.eps
Transmitter

S: Back sensor site
P: Pelvic Position (not to scale)

extract as fig11.eps
extract as fig12.eps
extract as fig14.eps
extract as fig15.eps
extract as fig16.eps