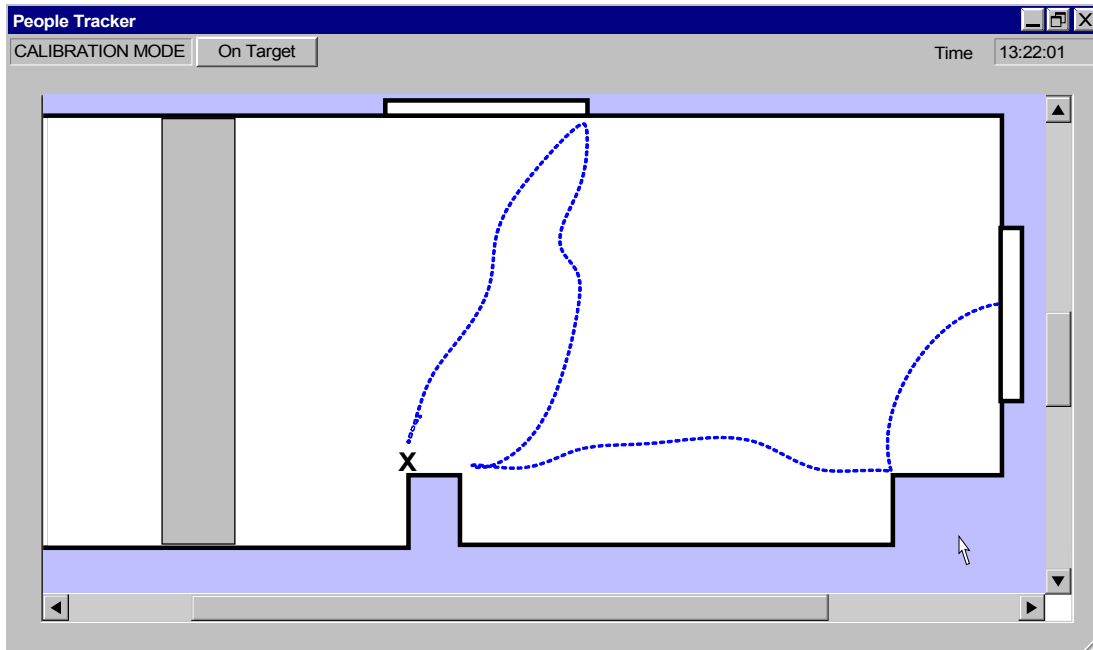


## 2.1 CALIBRATION

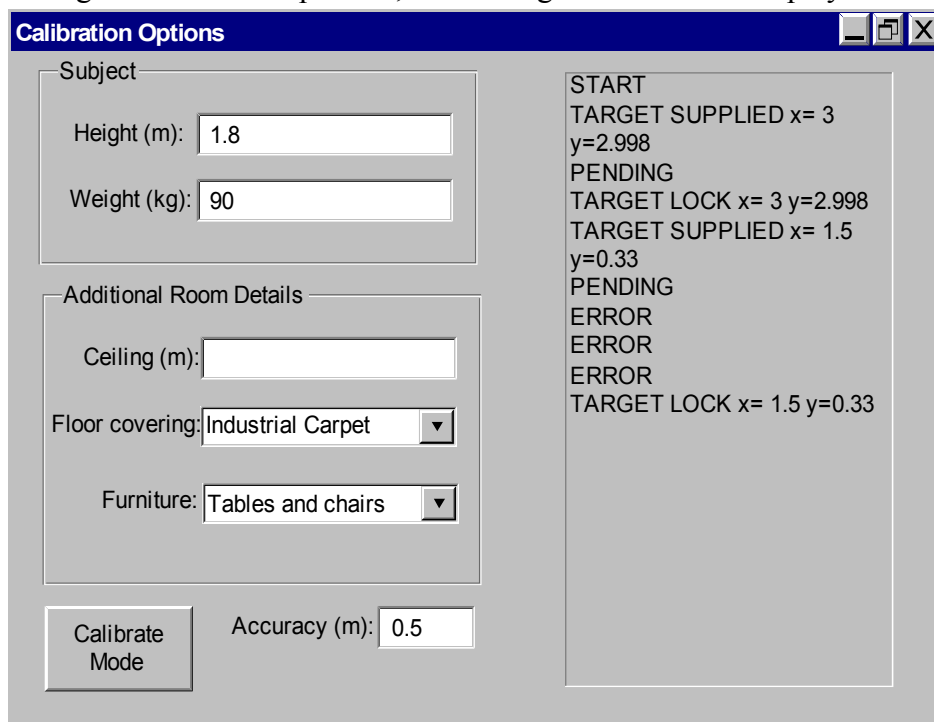
If required, the user can utilise the Calibration screen in order to undertake calibration of the system’s sensors. This can be done as many times as desired, but it’s best to do it at least every three or so months in order to compensate for the impact of seasonal variations to environment.

The procedure simply entails the user operating the software during the movement of a colleague to various locations around the room, as indicated by successive oblique crosses displayed by the People Tracker screen:



Whenever the colleague reaches the indicated location, the user must place the mouse pointer over the button marked “On Target” and click the right mouse button. This has the effect of “pressing” the button. The system will take this as indication that a person is now standing at the specified location.

During this calibration process, monitoring information is displayed in a panel in the Calibration Options Form:



This utilises a simple and easy to understand code as follows. “START” indicates that the pressing of the Calibration Mode button has just taken place, instantiating the calibration procedure. A St Andrews Cross is then displayed on the People Tracker screen by the system, along with TARGET SUPPLIED and coordinates relative to the sensor hub in the console. The second user will walk to this, during which time the system states that it is “PENDING”. When the first user has pressed the button marked “On Target”, the system will give the message “TARGET LOCK” and the Cartesian coordinates as before. “ERROR” merely indicates that tracking has been momentarily lost due to cosmic rays or unexpected Doppler effects. For a discussion of these and references to the relevant academic papers, see Appendix D and E respectively.

At the point where Target Lock is acquired, the system attempts to interpolate the sensor distortion curve with reference to the known points. When it has reached the required degree of certainty, the system will give message saying: “Calibration Complete! Do you wish to carry out further calibration? (Yes/No)”. Simply click OK to close all relevant windows. If required click on “No” in order to carry out further calibration. In order for this not to be redundant, the user is advised to change the *Accuracy (m)* field in the Calibration Options Screen.

The screenshot shows a window titled "Calibration Options" with a blue title bar and standard window controls (minimize, maximize, close). The window is divided into several sections:

- Subject:** A group box containing two text input fields: "Height (m):" and "Weight (kg):".
- Additional Room Details:** A group box containing:
  - "Ceiling (m):" text input field.
  - "Floor covering:" dropdown menu with "Industrial Carpet" selected.
  - "Furniture:" dropdown menu with "Tables and chairs" selected.
- Calibrate Mode:** A button located at the bottom left.
- Accuracy (m):** A text input field containing the value "1.0", positioned to the right of the "Calibrate Mode" button.

This field can hold any value not lower than 0.5. Attempting to enter a lower value triggers an error message saying, “The value must be greater than 0.5.” Click OK to acknowledge the message, then enter a new value. (Lower values would entail many iterations of the configuration sub-cycle, involving at least three hundred different calibration locations.)

**TIP:** The user can also utilise this screen in order to improve the sensor interpretation deployed by the system. This is done through the fields provided to enter details about the person walking to the locations, and about the physical attributes of the room, so implying certain acoustic properties.