We take the first equation to illustrate this problem. Firstly, we can obtain an equation according to the Euclidean distance formulation like equation (1) through considering the only one remote sensor.

$$\sqrt{(x_1-x)^2+(y_1-y)^2+(z_1-z)^2} = c(t_1-t) \tag{1}$$

$$(x_1-x)^2+(y_1-y)^2+(z_1-z)^2 = c^2(t_1-t)^2 \tag{2}$$

$$x_1^2+y_1^2+z_1^2+x^2-2x_1x+y^2-2y_1y+z^2-2z_1z = c^2t_1^2-2c^2t_1t+c^2t^2 \tag{3}$$

Put the $c^2t_1^2$ to the left of the equation, then we can get the equation(4).

$$x_1^2+y_1^2+z_1^2-c^2t_1^2+x^2-2x_1x+y^2-2y_1y+z^2-2z_1z = -2c^2t_1t+c^2t^2 \tag{4}$$

Then, we can replace the first four items to $R_1$, get euation (5)

$$R_1-c^2t^2+x^2+y^2+z^2-2x_1x-2y_1y-2z_1z = -2c^2t_1t \tag{5}$$

We replace the $c^2t^2-R_1$ to $T_1$, the equation (5) will become equation (6).

$$x^2+y^2+z^2-c^2t^2-2(x_1x+y_1y+z_1z-c^2t_1t) = -R_1 \tag{6}$$

We list all the formula from sensor 1 to sensor n and get the equation (7).

$$\begin{aligned}
x^2+y^2+z^2-c^2t^2-2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_1 \\
x^2+y^2+z^2-c^2t^2-2(x_2x+y_2y+z_2z-c^2t_2t) &= -R_2 \\
x^2+y^2+z^2-c^2t^2-2(x_3x+y_3y+z_3z-c^2t_3t) &= -R_3 \\
x^2+y^2+z^2-c^2t^2-2(x_4x+y_4y+z_4z-c^2t_4t) &= -R_4 \\
x^2+y^2+z^2-c^2t^2-2(x_5x+y_5y+z_5z-c^2t_5t) &= -R_5 \\
&\cdots \\
x^2+y^2+z^2-c^2t^2-2(x_nx+y_ny+z_nz-c^2t_nt) &= -R_n
\end{aligned} \tag{7}$$

We simplify the equation (7) from the second to the n through minusing the first equation, and get the equation (8).

$$\begin{aligned}
x^2+y^2+z^2-c^2t^2-2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_1 \\
-2(x_2x+y_2y+z_2z-c^2t_2t)+2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_2+R_1 \\
-2(x_3x+y_3y+z_3z-c^2t_3t)+2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_3+R_1 \\
-2(x_4x+y_4y+z_4z-c^2t_4t)+2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_4+R_1 \\
-2(x_5x+y_5y+z_5z-c^2t_5t)+2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_5+R_1 \\
&\cdots \\
-2(x_nx+y_ny+z_nz-c^2t_nt)+2(x_1x+y_1y+z_1z-c^2t_1t) &= -R_n+R_1
\end{aligned} \tag{8}$$

We can further simplify the above equation to equation (9).

$$
\begin{aligned}
(x_1 - x_2)x + (y_1 - y_2)y + (z_1 - z_2)z + (t_2 - t_1)c^2 t &= \frac{R_1 - R_2}{2} \\
(x_1 - x_3)x + (y_1 - y_3)y + (z_1 - z_3)z + (t_3 - t_1)c^2 t &= \frac{R_1 - R_3}{2} \\
(x_1 - x_4)x + (y_1 - y_4)y + (z_1 - z_4)z + (t_4 - t_1)c^2 t &= \frac{R_1 - R_4}{2} \\
(x_1 - x_5)x + (y_1 - y_5)y + (z_1 - z_5)z + (t_5 - t_1)c^2 t &= \frac{R_1 - R_5}{2} \\
&\dots \\
(x_1 - x_n)x + (y_1 - y_n)y + (z_1 - z_n)z + (t_n - t_1)c^2 t &= \frac{R_1 - R_n}{2}
\end{aligned}
\tag{9}
$$

And we can transform this equation group into a determinant as equation (10).

$$
\begin{bmatrix}
(x_1 - x_2) & (y_1 - y_2) & (z_1 - z_2) & (t_2 - t_1)c^2 \\
(x_1 - x_3) & (y_1 - y_3) & (z_1 - z_3) & (t_3 - t_1)c^2 \\
(x_1 - x_4) & (y_1 - y_4) & (z_1 - z_4) & (t_4 - t_1)c^2 \\
(x_1 - x_5) & (y_1 - y_5) & (z_1 - z_5) & (t_5 - t_1)c^2 \\
\vdots & \vdots & \vdots & \vdots \\
(x_1 - x_n) & (y_1 - y_n) & (z_1 - z_n) & (t_n - t_1)c^2
\end{bmatrix}
\begin{bmatrix} x \\ y \\ z \\ t \end{bmatrix}
=
\begin{bmatrix}
\frac{R_1 - R_2}{2} \\
\frac{R_1 - R_3}{2} \\
\frac{R_1 - R_4}{2} \\
\frac{R_1 - R_5}{2} \\
\vdots \\
\frac{R_1 - R_n}{2}
\end{bmatrix}
\tag{10}
$$

Then, we can use the thoery of the linear algebra to find many consequences of this equation cause when the order of the determinant are not full.