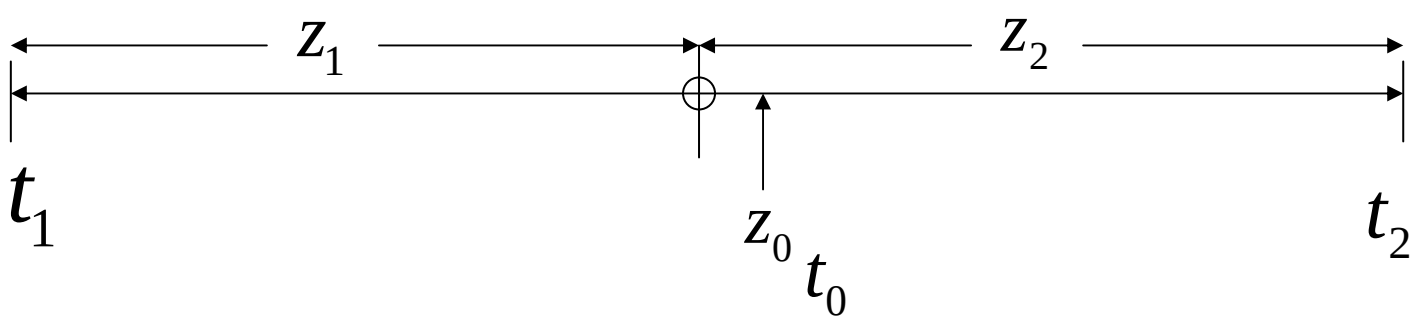
Reference Timing for FP420



$$t_1 - t_0 = \frac{c}{|z_1| + z_0}; \quad t_2 - t_0 = \frac{c}{|z_2| - z_0}$$

($|z_i|$ are distances but z_0 is signed)

Stating the obvious, but ⇒ $$z_0 = \left(\frac{c}{2}\right) \times \left(\frac{1}{t_1 - t_0} + \frac{1}{t_2 - t_0}\right)$$

if $z_1 = z_2$

The reference time, given by a local (to FP420) "clock" must

(a) have no differential jitter (at few ps level) between L and R stations

(b) be calibrate-able ⇒ fix $z_0 = 0$ and $\left(\frac{dz_0}{d - TDC}\right)$