from previous time

$$\mu_1 = A\mu_{fused} + Bu$$

$$\begin{aligned}\sigma_1^2 &= A\sigma_{fused}^2 A + Q \\ &= A^2\sigma_{fused}^2 + Q\end{aligned}$$

$$\begin{aligned}K &= \sigma_1^2 C(C\sigma_1^2 C + \sigma_2^2)^{-1} \\ &= \frac{C\sigma_1^2}{C^2\sigma_1^2 + \sigma_2^2}\end{aligned}$$

$$\mu_{fused} = \mu_1 + K(\mu_2 - C\mu_1)$$

$$\sigma_{fused}^2 = (1 - KC)\sigma_1^2$$