$$\dot{a}(t) + (\alpha_L - r(t))\, a(t) = w(t) - c(t)$$

$$\dot{a}(t) - (r(t) - \alpha_L)\, a(t) = w(t) - c(t)$$

Integrerende faktor:

$$e^{-\int_{t_0}^{t} (r(s) - \alpha_L)\, ds}$$

$$a e^{-\int_{t_0}^{t} (r(s) - \alpha_L)\, ds} =$$

$$\int_{t_0}^{t} (w(s) - c(s))\, e^{-\int_{t_0}^{s} (r(\tau) - \alpha_L)\, d\tau}\, ds$$

$$+ C$$

$$\Rightarrow a(t) = a_0 e^{\int_{t_0}^{t} (r(s) - \alpha_L)\, ds}$$

$$+ e^{\int_{t_0}^{t} (r(s) - \alpha_L)\, ds} \int_{t_0}^{t} (w(s) - c(s))\, e^{-\int_{t_0}^{s} (r(\tau) - \alpha_L)\, d\tau}\, ds$$

$$a(t_0) = a_0 \in \mathbb{R}$$

$$a(t_0) = C = a_0$$

$$a(t) e^{-\int_{t_0}^{t} (r(s) - \alpha_L)\, ds} + \int_{t_0}^{t} c(s) e^{-\int_{t_0}^{s} (r(\tau) - \alpha_L)\, d\tau}\, ds$$

$$= a_0 + \int_{t_0}^{t} w(s) e^{-\int_{t_0}^{s} (r(\tau) - \alpha_L)\, d\tau}\, ds$$