$$\mathbf{d}_{YLD} = \begin{array}{c} \text{H} \\ \text{S1} \\ \text{S2} \\ \text{DOC} \\ \text{DS} \end{array} \left(\begin{array}{c} 0 \\ \texttt{dwS1}\frac{1}{r\Delta_t}(1-e^{-r\Delta_t})\Delta_t \\ \texttt{dwS2}\frac{1}{r\Delta_t}(1-e^{-r\Delta_t})\Delta_t \\ 0 \\ 0 \end{array} \right)$$

$$\mathbf{d}_{YLL}(t) = \begin{array}{c} \text{H} \\ \text{S1} \\ \text{S2} \\ \text{DOC} \\ \text{DS} \end{array} \left(\begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \\ \frac{1}{r}\left(1-e^{-rEx(a(t))}\right) \end{array} \right)$$