

$$\begin{aligned}
\mathbf{G}_n &= \mathbf{P}_{n|n-\imath} \mathbf{B}_n^T [\mathbf{B}_n \mathbf{P}_{n|n-\imath} \mathbf{B}_n^T + \mathbf{Q}_{\nu,n}]^{-\imath} & (\Upsilon \imath) \\
\boldsymbol{\alpha}_n &= \mathbf{y}_n - \mathbf{B}_n \hat{\mathbf{x}}_{n|n-\imath} & (\Upsilon \imath) \\
\hat{\mathbf{x}}_{n|n} &= \hat{\mathbf{x}}_{n|n-\imath} + \mathbf{G}_n \boldsymbol{\alpha}_n & (\Upsilon \imath) \\
\hat{\mathbf{x}}_{n|n+\imath} &= \mathbf{A}_{n+\imath,n} \hat{\mathbf{x}}_{n|n} & (\Upsilon \imath) \\
\mathbf{P}_{n|n} &= \mathbf{P}_{n|n-\imath} - \mathbf{G}_n \mathbf{B}_n \mathbf{P}_{n|n-\imath} & (\Upsilon \imath) \\
\mathbf{P}_{n+\imath|n} &= \mathbf{A}_{n+\imath,n} \mathbf{P}_{n|n} \mathbf{A}_{n+\imath,n}^T + \mathbf{Q}_{\omega,n} & (\Upsilon \imath)
\end{aligned}$$