



$$\hat{\mathbf{v}}_O = \begin{bmatrix} \underline{\boldsymbol{\omega}} \\ \underline{\mathbf{v}}_O \end{bmatrix} = \begin{bmatrix} \omega_x \\ \omega_y \\ \omega_z \\ v_{Ox} \\ v_{Oy} \\ v_{Oz} \end{bmatrix} \quad \hat{\mathbf{v}} = \omega_x \mathbf{d}_{Ox} + \omega_y \mathbf{d}_{Oy} + \omega_z \mathbf{d}_{Oz} + v_{Ox} \mathbf{d}_x + v_{Oy} \mathbf{d}_y + v_{Oz} \mathbf{d}_z$$