

$$l_{DVL} = \begin{bmatrix} \Delta \alpha \\ \Delta y \\ \Delta z \end{bmatrix} \quad (\Delta y = 0)$$

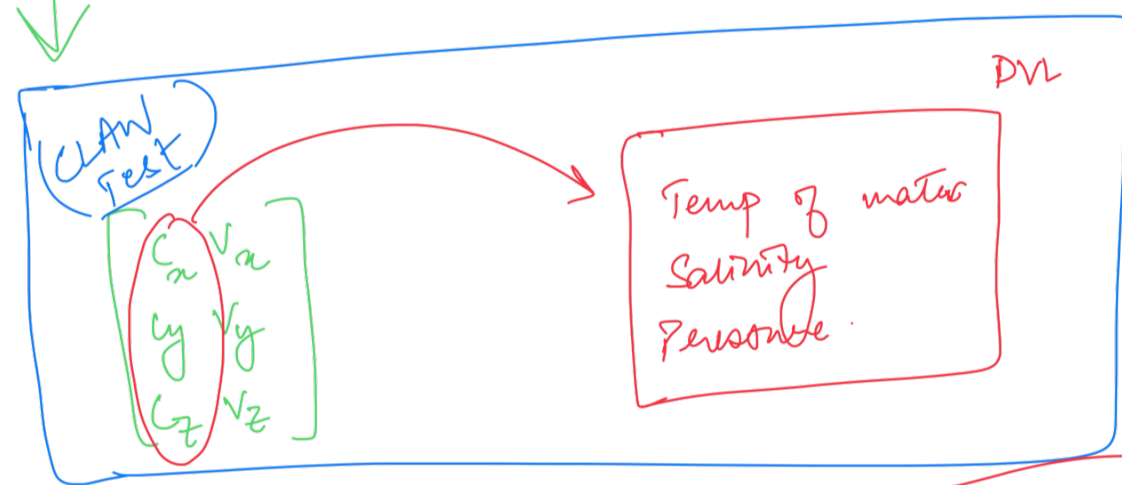
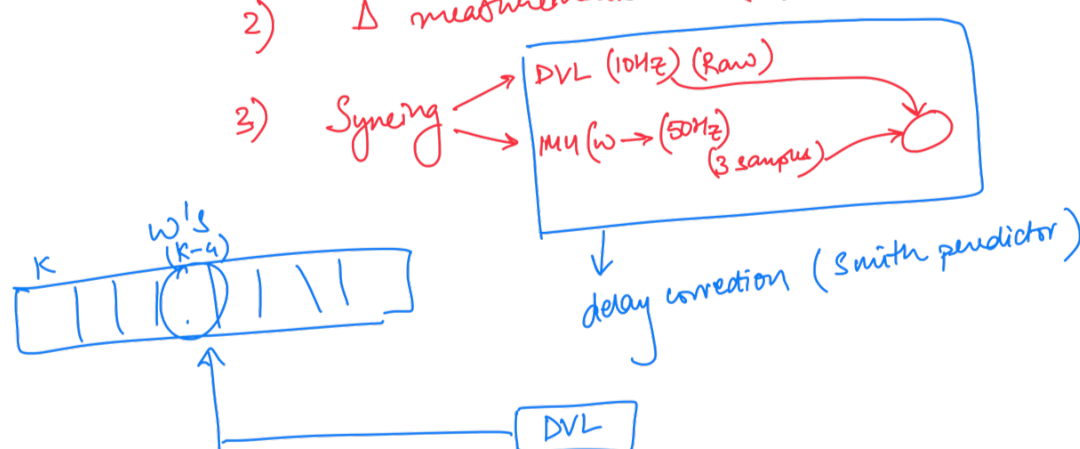
$$\tilde{V}_{DVL, CORR} = \hat{C}_1 \tilde{V}_{DVL, RAW} - (\underline{\omega}_{IMU} \times l_{DVL})$$

$$\Rightarrow \begin{bmatrix} \hat{i} & \hat{j} & \hat{k} \\ \omega_x & \omega_y & \omega_z \\ \Delta \alpha & \Delta y & \Delta z \end{bmatrix} = \begin{bmatrix} +\hat{i}(\omega_y \Delta z - \omega_z \Delta y) \\ -\hat{j}(\omega_x \Delta z - \omega_z \Delta \alpha) \\ +\hat{k}(\omega_x \Delta y - \omega_y \Delta \alpha) \end{bmatrix}$$

1) Coordinates.

2) Δ measurements \rightarrow (SI) m and radians

3) Syncing



GPS (A) \longleftrightarrow (B)

\rightarrow True North \star

