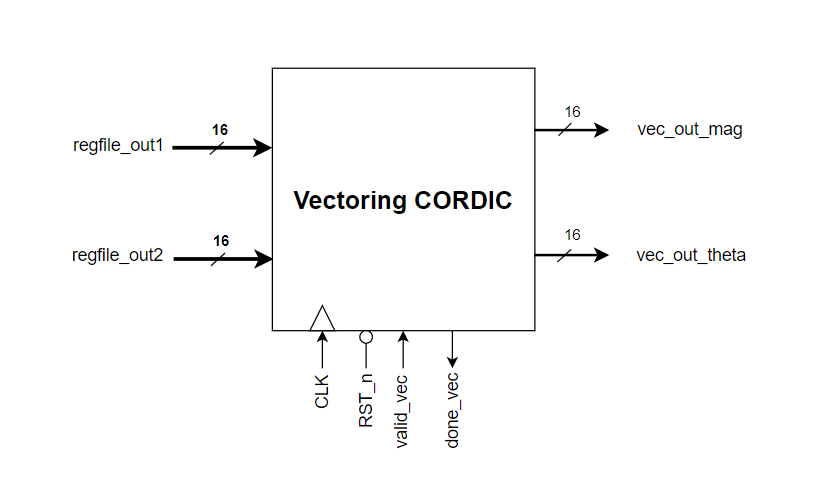
Vectoring CORDIC

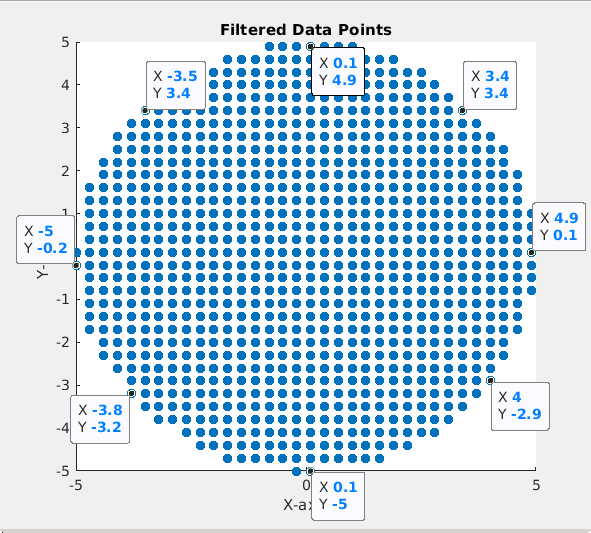


* Function

Vectoring CORDIC is waiting for input pulse from valid\_vec signal to start calculating, then it takes two inputs regfile\_out1 is the current pivot and regfile\_out2 is the element under the current pivot that we want to eliminate it.

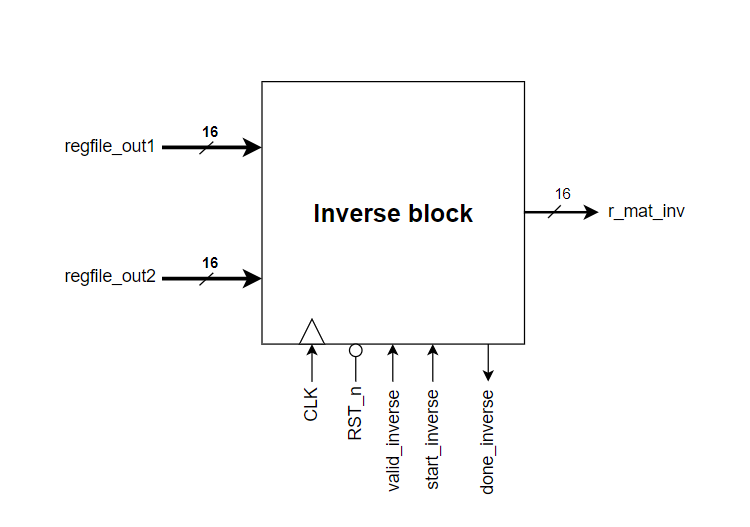
It takes around 12 Cycles to end the calculations and then give us vec\_out\_mag the new pivot and the rotated theta that we will use it later as an input to the rotational CORDIC to evaluate sine and cosine for to evaluate the Q matrix.

After it finish it send a done signal to the FSM to tell it that I had finished.



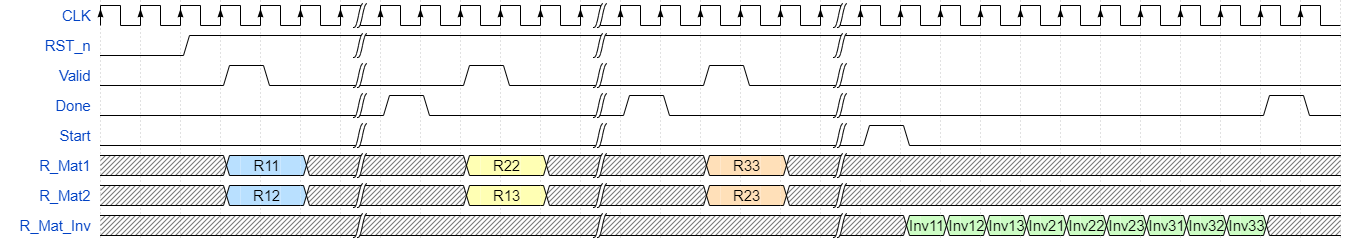
Region of conversion in Vectoring CORDIC

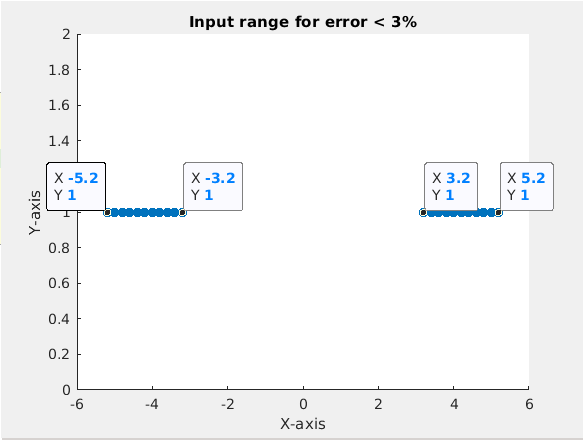
* Inverse block



* Function

This block takes the R matrix and evaluate its inverse and the inverse matrix out from the block in 9 clock cycles, valid\_inverse pulse tells the block that you have new data at the input ports and then the block takes them in the next clock cycle, start\_inverse tell the block to start sending the inverse matrix that had been calculated.





Region of operation for inverse block

A diagram of a flowchart

Description automatically generated