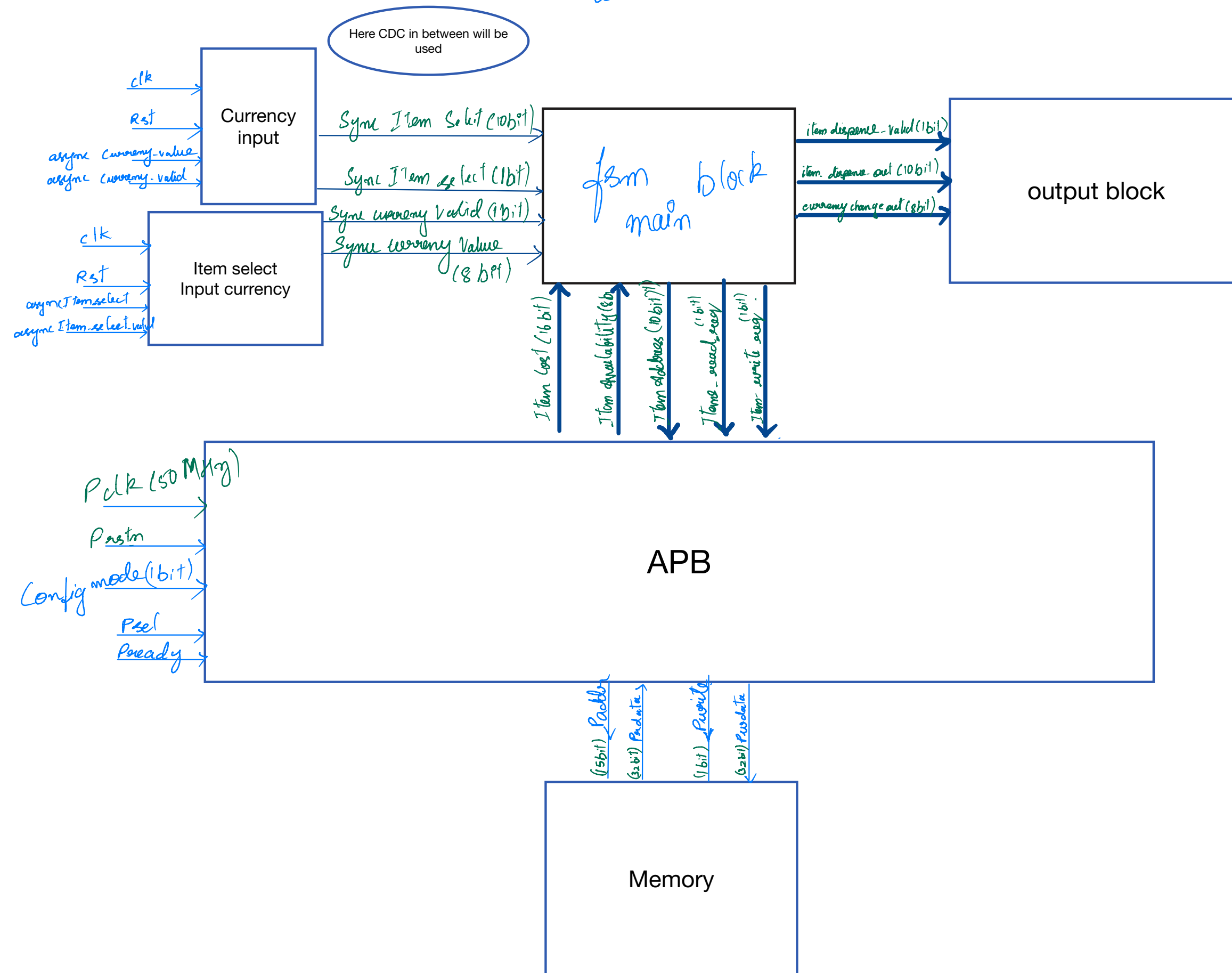


item availability $\rightarrow 8 \text{ bits} \Rightarrow$ memory width (31 bit) allocated [23:13]
 $2^8 - 1 = 255$ for each item

item-cost $\rightarrow 16 \text{ bits} \Rightarrow$ memory [15:0]
 $2^{16} - 1 = 65,535$



States

Idle state \rightarrow waits for valid Item select

Wait for money \rightarrow \rightarrow Check Item cost in CFG
 \rightarrow accumulate money \geq item

Disperse Item \rightarrow \rightarrow Send Item-dispense valid signal
 \rightarrow Send update req to CFG block.

Return-change \rightarrow Returns excess money
 \rightarrow Back to IDLE state

Error handling

\rightarrow If Item not available go to return-change and return all
 \rightarrow latency of 10 clocks [challenge]