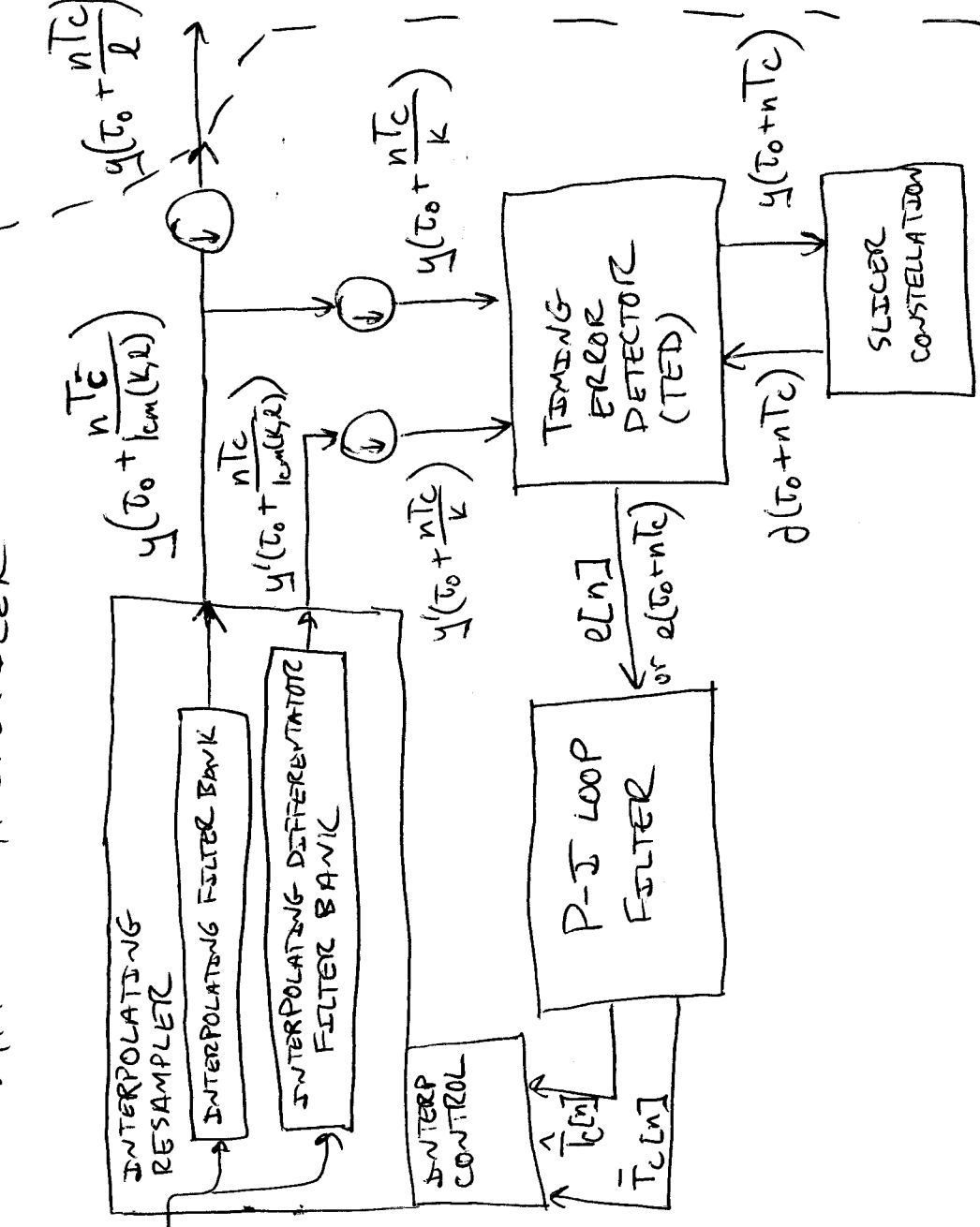


SYMBOL SYNCHRONIZER



$s(t_1 + mT_s)$
 $x(t_2 + mT_s)$
 MATCHED FILTER
 T_s : input sample clock period
 t_1, t_2 : input sample phase/delay
 T_c : symbol clock period
 K : TED inputs required per symbol
 l : OUTPUT SAMPLES PER SYMBOL
 $x(t)$: input
 $y(t)$: resampled output
 $d(t)$: symbol decision
 $e[n]$: TED error output (once per symbol)

$\hat{T}_{c[n]}$: INSTANTANEOUS SYMBOL CLOCK ESTIMATE
 $\bar{T}_{c[n]}$: AVERAGE SYMBOL CLOCK ESTIMATE

ANDY WALLS
 23 APR 2017