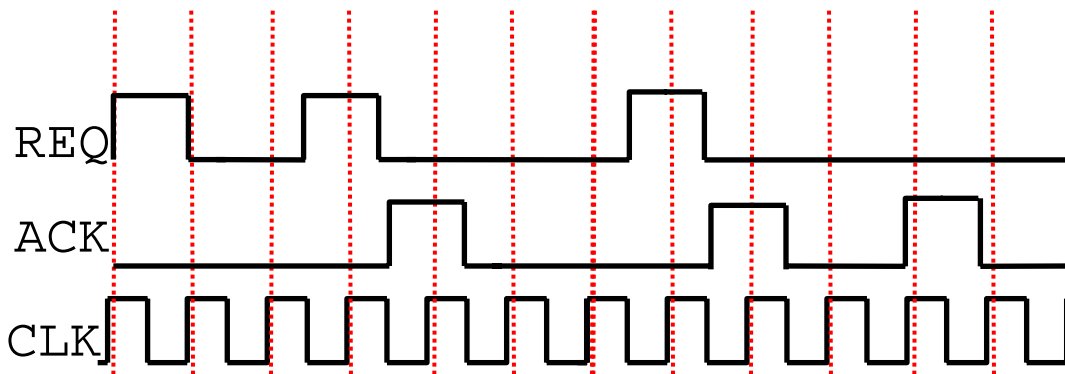# Modeling Layer Example

- Requirement :-
  - Every REQ must have an ACK sometime later
  - The ACK can occur any time
    - There does not have to be an ACK before another REQ
  - No ACK without REQ


```
vunit MYVUNIT (MY_MODULE) {
integer  NUM_HSHAKES = 0;
always @(posedge CLK or posedge RESET)
begin: MYPROC
if  RESET
    NUM_HANDSHAKES<= 0;

else
  begin
    if REQ & !ACK
      NUM_HSHAKES<= NUM_HSHAKES+ 1;
    if  ACK & !REQ
      NUM_HSHAKES<= NUM_HSHAKES- 1;
  end

property MYROP1 =
 always ( (REQ & (NUM_HSHAKES=0)) -> next
    (eventually! ( NUM_HSHAKES = 0) )));
property MYPROP2 is never
                (NUM_HSHAKES < 0);
}
```