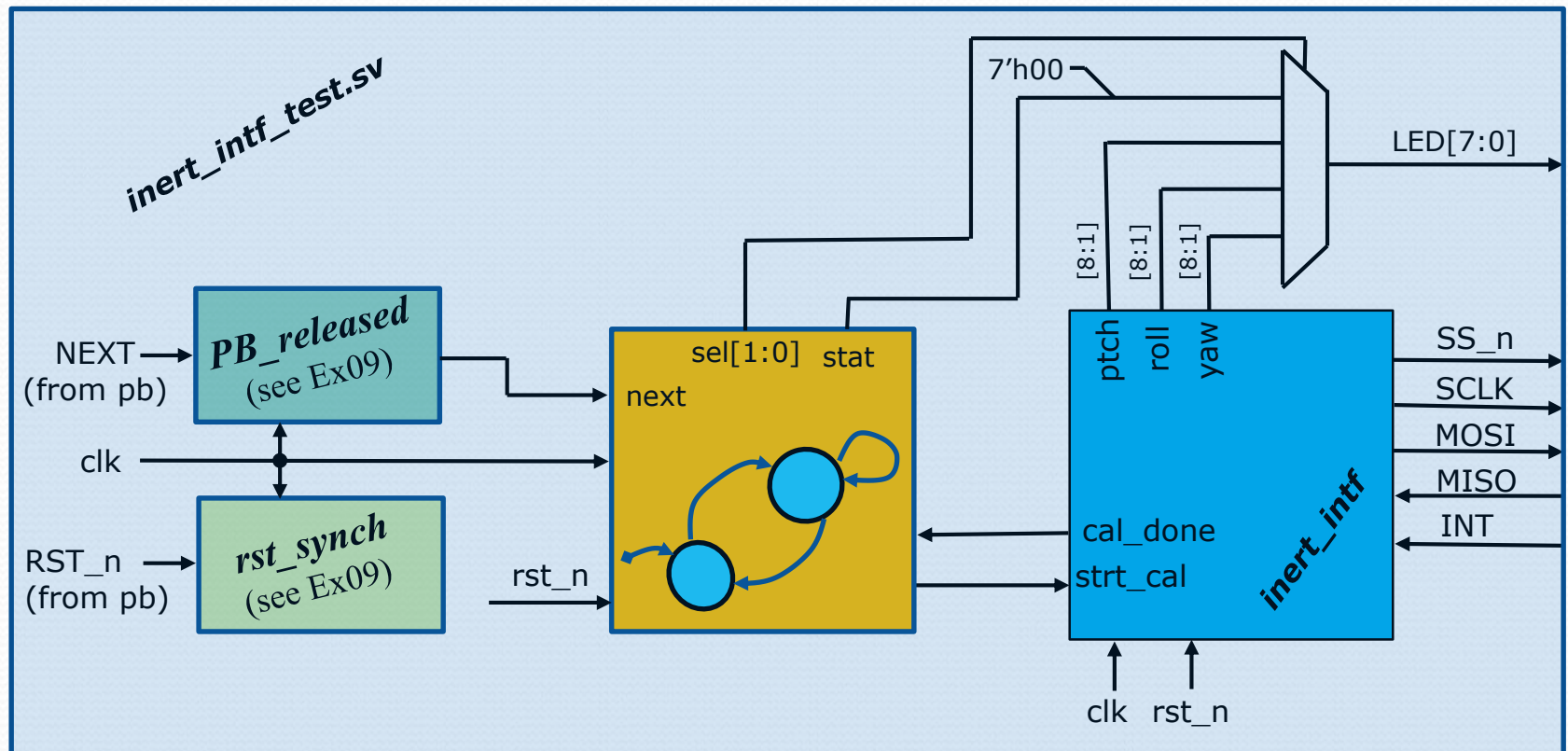


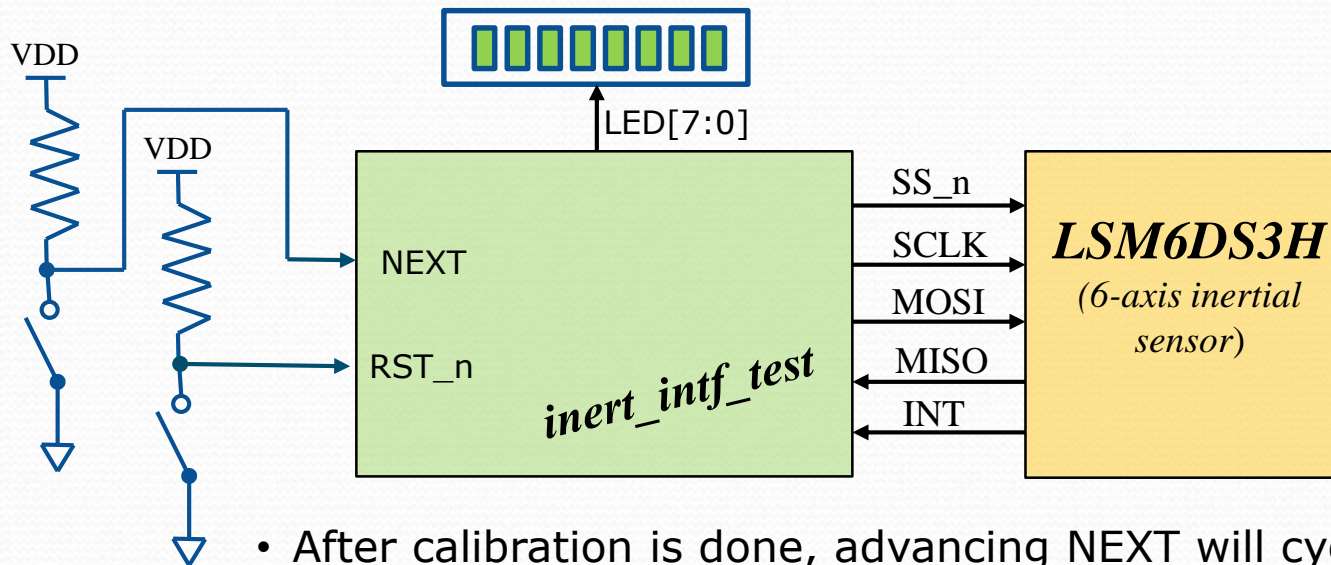
Exercise 22: Mapping inert_intf to DE0 Nano

- In exercise 21 you finished inert_intf.sv and tested it. Now you will map it to the DE0-Nano board so you can test it “for real”.



Exercise 22: Mapping inert_intf_test to DE0 Nano

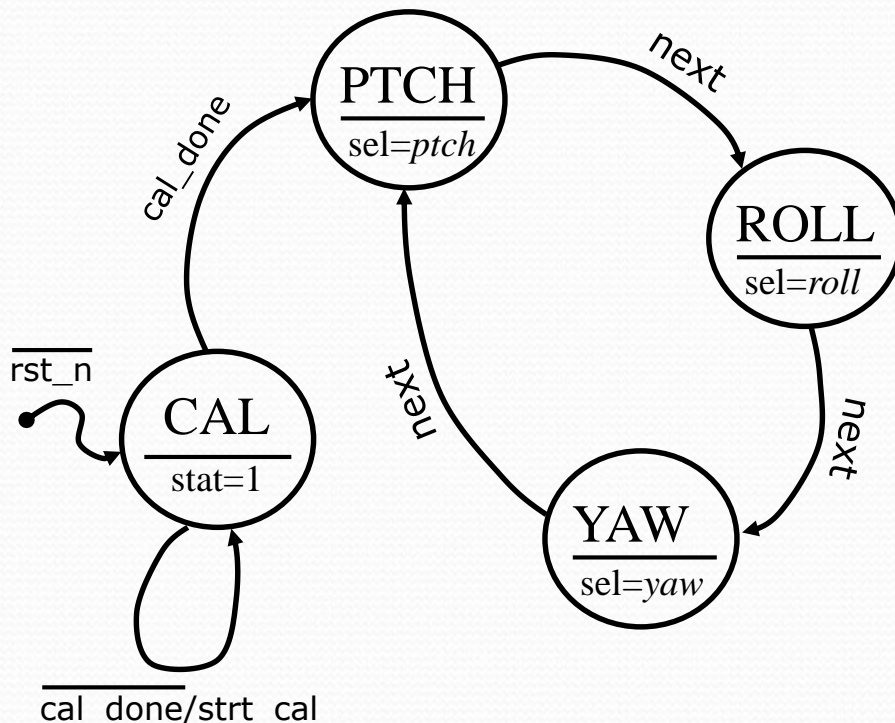
Signal:	Dir:	Description:
clk	in	50MHz clock
RST_n	in	Unsynchronized input from push button
NEXT	In	After calibration this would advance sel[1:0] to display the next value of ptch, roll, or yaw on the LEDs
LED[7:0]	out	Flopped upper 8-bits of conversion results. Flopped when cnv_cmplt .
<i>SPI Intf</i>	out/ in	The SS_n, SCLK, MOSI, MISO and INT of SPI interface to 6-axis inertial sensor



- After calibration is done, advancing NEXT will cycle through displaying bits 8:1 of pitch, roll, or yaw on the LEDs

Exercise 22: Mapping inert_intf_test to DE0 Nano

- The state machine is simple. It starts by issuing **strt_cal** and waiting for **cal_done**. During this time only the LSB of the LEDs should be lit (**stat**=1, and **sel**=*show_stat*).
- Once calibration is completed it simply displays bits [8:1] of either the pitch, roll, or yaw readings on the LEDs.



- Create **inert_intf_test.sv**
- Ensure it compiles
- Test it in ModelSim if you like, otherwise you can just go for the DE-0 demo

Exercise 22: Mapping inert_intf_test to DE0 Nano

- There are Quartus project file and settings file available for download: (**`inert_intf_test.qpf`**, **`inert_intf_test.qsf`**).
- Open the .qpf and **ensure you add** all necessary files to the project.
- Ensure the project builds with no errors
- Once it does program your DE0-Nano and call Dave or Eric over to demo.

