LAB Assignment #4 for ECE 525

Assigned: Tue., Feb. 28, 2017
Due: Thur., March. 2, 2017

Description: Run HELP Enrollment Process.

1) Download the following:

On your laptop in a directory called PROTOCOL:
common.h
common.c
verifier_enrollment.c
verifier_common.c
verifier_common.h
Makefile_VE
compile.csh
KG_SBOX_AMS_Random_ATPG_Rise_1450Vs_Fall_1450Vs_NumSeeds_11.txt (vector file)
README.txt

On your laptop in a directory called SDK:
common.h
common.c
token_common.c
token_common.h
token_enrollment.c

On your laptop in a directory called BITSTREAM:
aes_sbox_enrollment.bit
design_1_wrapper.hdf

2) Compile the verifier code by running 'compile.csh' on your laptop. This creates 'verifier_enrollment' which you will run below in step 6.

3) You do NOT need to create a Vivado project because we are giving you the bitstream for the board. You will need a hardware description of the project we built (when we created the bitstream) to pass to sdk so it knows what the hardware platform looks like. The hardware platform is described in design_1_wrapper.hdf. You need to run the following command from the BITSTREAM directory:

xsdk -vmargs -Dorg.eclipse.swt.internal.gtk.cairoGraphics="false" &

Use the current BITSTREAM directory when prompted with 'Select Workspace Directory'. Once SDK opens, under 'File', 'New', 'other', choose New Hardware Specification under Xilinx, then browse to the 'design_1_wrapper.hdf' file under 'Target Hardware Specification'. Select it. This should add 'design_1_wrapper_hw_platform_0' to your sdk Project Explorer

4) Under ‘File’, ‘New’, ‘Application’, use ‘Enrollment’ as the Project name, select linux as OS Platform, and then empty application. This creates ‘Enrollment’ in the Project Explorer. Add the source files from your SDK directory to the ‘Enrollment’ application and build the application as you did in lab3.

5) The ‘Enrollment.elf’ file will be in the Debug directory created under the BITSTREAM directory. Program the board, setup the network as you did for lab3, scp the Enrollment.elf file to the Zybo board.

6) Execute ‘verifier_enrollment’ (see README.txt for command line options -- you may need to tune the IP address depending on how you assigned them in step 5).

7) Execute ‘Enrollment.elf’ on the zybo board using a serial connection or ssh. Again, use the command line parameters from the README.txt file. Change the chip name from C1 to Cx (I’ll give you a number in class for your board that you’ll use the rest of the term).

8) If all goes well, the Enrollment.elf command will finish and a file by the name ‘Cx_PNs.txt’ will be created on the Zybo board. This is the enrollment data for your board. Transfer this file to your laptop and store it in the PROTOCOL directory.