

Assignment 4

1. Become familiar with the System-on-Chip Environment (SCE)
 - Setup
 - Note that we will use the 2003 version of SCE for the tutorial:
 - `source /opt/sce-20030530/bin/setup.csh`
 - `rm -rf ~/.sce`
 - `mkdir demo`
 - `cd demo`
 - `setup_demo`
 - Open the SCE Tutorial document
 - `acroread SCE_Tutorial/sce-tutorial.pdf &`
 - To protect the environment and save some trees, please *do not print* the tutorial document! It contains 250 pages and you will likely read it only once... ;-)
 - Follow the SCE Tutorial instructions
 - `sce &`
 - ...
 - Cleanup
 - When done (or to start over), clean up your demo directory
 - `cd ..`
 - `rm -rf demo`

EECS222C: SoC Software Synthesis, Assignment 4

(c) 2010 R. Doemer

1

Assignment 4

2. Setup your MP3 Decoder model in SCE
 - Setup SCE
 - Note that we will use the 2010 version of SCE for the MP3 decoder:
 - `source /opt/sce-20100908/bin/setup.csh`
 - `rm -rf ~/.sce`
 - `cd mad_SpecC`
 - `sce &`
 - Create a new project in SCE
 - **Project->New**
 - **Project->Settings**
 - Set include path to "." (current directory)
 - Set libraries to "-x1 huffman.o"
 - Set both verbosity and warning level to 2
 - In the Simulator tab, set the simulation command as follows (single line!):
`./%e testStream/spot1_3K.mp3 spot1_3K.pcm &&
diff reference/spot1_3K.pcm spot1_3K.pcm`
 - **Project->SaveAs "mp3.sce"**

EECS222C: SoC Software Synthesis, Assignment 4

(c) 2010 R. Doemer

2

Assignment 4

3. Compile and simulate your MP3 Decoder model in SCE

- ... (continued from previous page)
- Load your design model into SCE
 - **File->Import "testbench.sc"**
 - **Project->AddDesign**
 - Right-click on `testbench.sir` in the project window, and **Rename** the model to `Spec`
- Compile and simulate your model in SCE
 - **Validation->Compile**
 - **Validation->Simulate**

Assignment 4

4. Analyze your MP3 decoder model in SCE

- ... (continued from previous page)
- Browse the structural hierarchy charts
 - Select the **main** behavior in the behavior browser
 - Right-click ->**Chart**
 - Double-click the chart to add a level of hierarchy
 - **View->Connectivity**
 - ...
- Print the hierarchy chart for the Synthesis Filter
 - Select the **synth** behavior in the behavior browser
 - Right-click ->**Chart**
 - Add several levels of hierarchy
 - **Window->Print...** in color (!) to file **"synth.ps"**
- **Deliverable**
 - Hierarchy chart **"synth.ps"** (in color!)
 - by Friday, Oct 24, 2008, at noon
 - by email to doemer@uci.edu with subject "EECS222C HW4"

