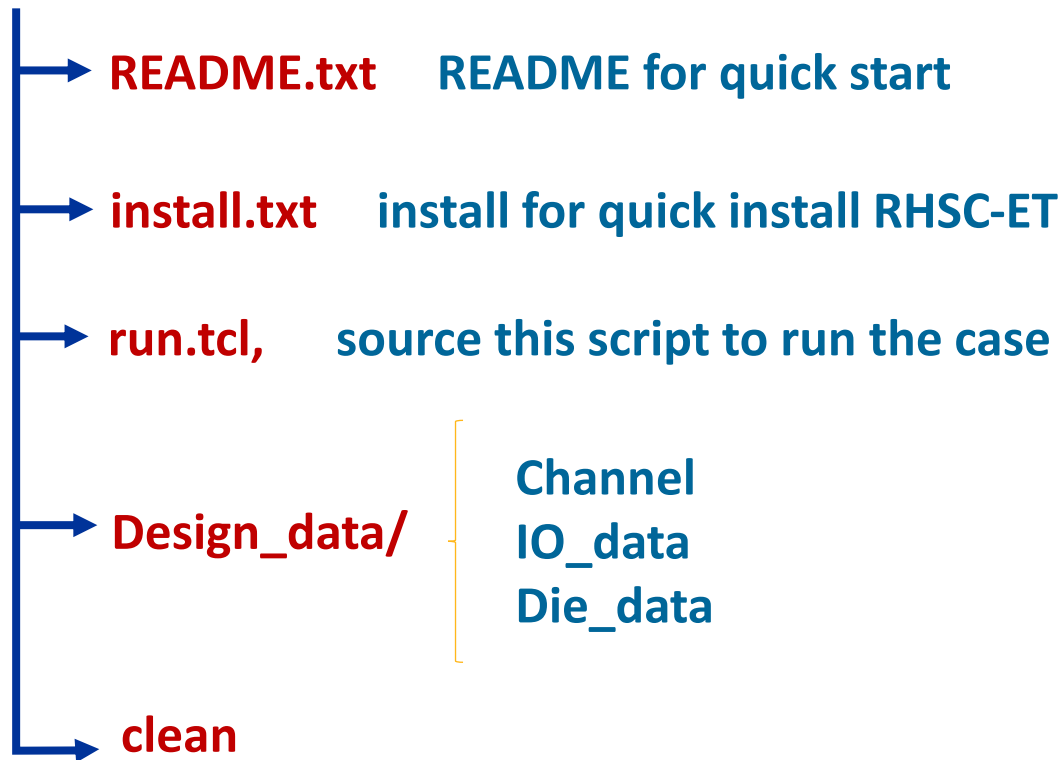# SI Flow Tutorial

2022/12/1

Ansys

Introduction

※ **We will be taking RedHawk-SC Electrothermal SI Flow through this set of run and analysis script:**

※ **Run scripts:**
- **run.tcl: this script does the following:**
  - ✓ **Imports data**
  - ✓ **Performs on-die PDN modeling**
  - ✓ **Performs system level simulation**
  - ✓ **JEDEC Compliance Test Reporting**
- **Bring up RHSC-ET GUI to view results**

Directory Structure

Training directory

→ **README.txt**   README for quick start

→ **install.txt**   install for quick install RHSC-ET

→ **run.tcl,**   source this script to run the case

→ **Design_data/**   Channel
IO_data
Die_data

→ **clean**

Step I: Install and Set License

※ **Set Redhawk-SC Electrothermal path and license :**
- setenv CPSROOT <choose the version installed on your server>
- set path = ($CPSROOT/bin $path)
- setenv ANSYSLMD_LICENSE_FILE <To your redhawk_csm/redhawk_sc_electrothermal license>

※ **To execute SI flow:**
- redhawk_sc_et -csm &

Step II: Running the script: run.tcl

※ **First cd into the Training_testcase directory**

※ **Make sure the design_data is in the same path**

※ **To run the script：**
  - **cd Training_testcase/SI/**
  - **csm -ng run.tcl or**
  - **csm run.tcl**
  - **csm, then source the run.tcl in TCL window**

※ **What does run.tcl do？**
  - ✓ **Create the new project**
  - ✓ **Import chip design data, io circuit design data, decap file,**
  - ✓ **Perform PDN extraction**
  - ✓ **Perform simulation**

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Step III: Result Exploration using GUI

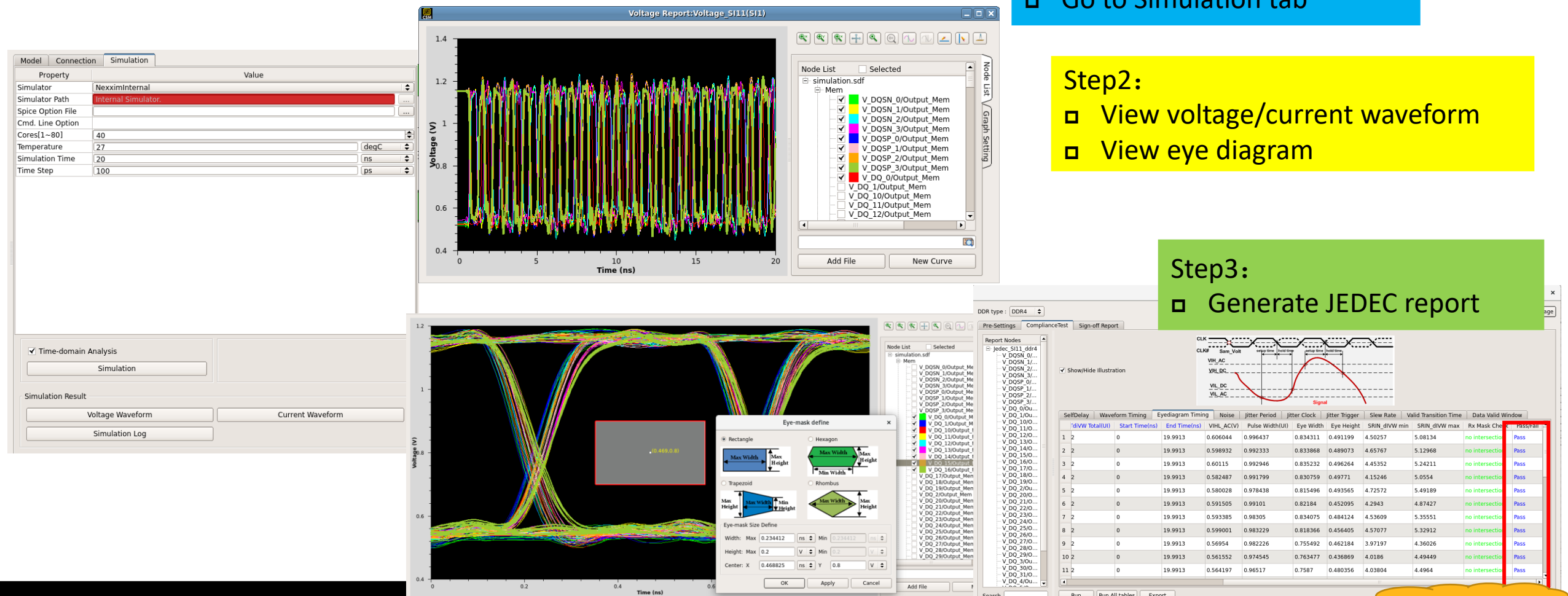※ **View the results in RHSC-ET GUI**

Step1：
- Go to Simulation tab

Step2：
- View voltage/current waveform
- View eye diagram

Step3：
- Generate JEDEC report

Pass or Fail?