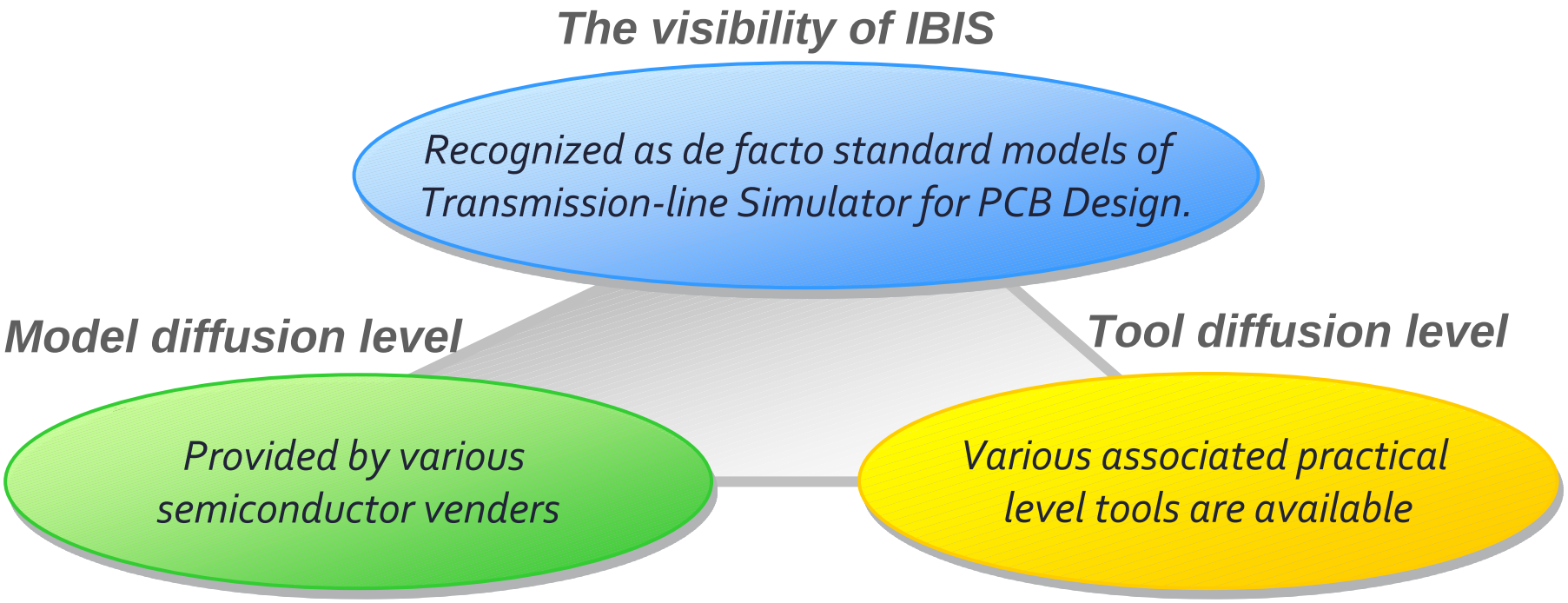
Easy IBIS model handling with Simulation Kit

ZUKEN Inc.
High-speed Solution Center

IBIS Summit
Tokyo, Japan
November 14, 2008

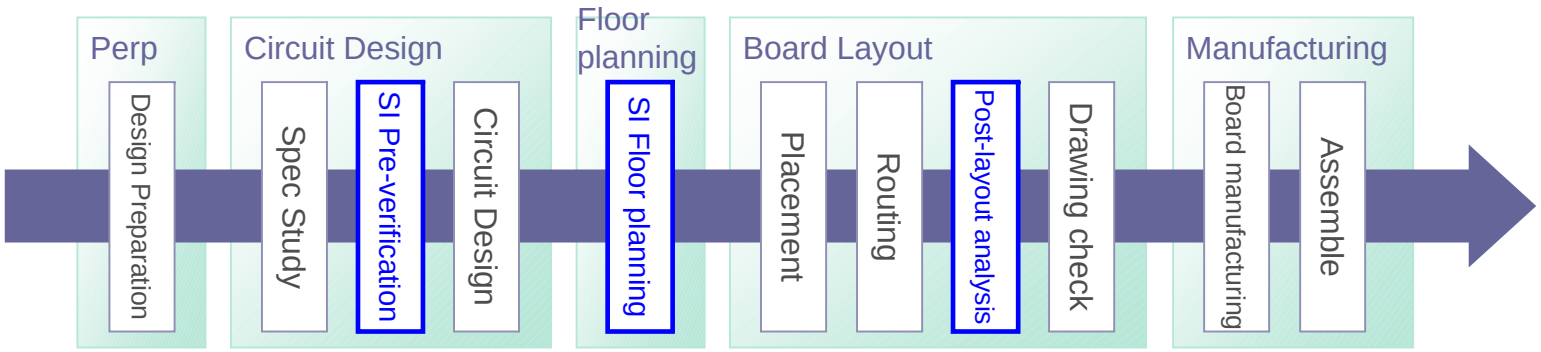
ZUKEN

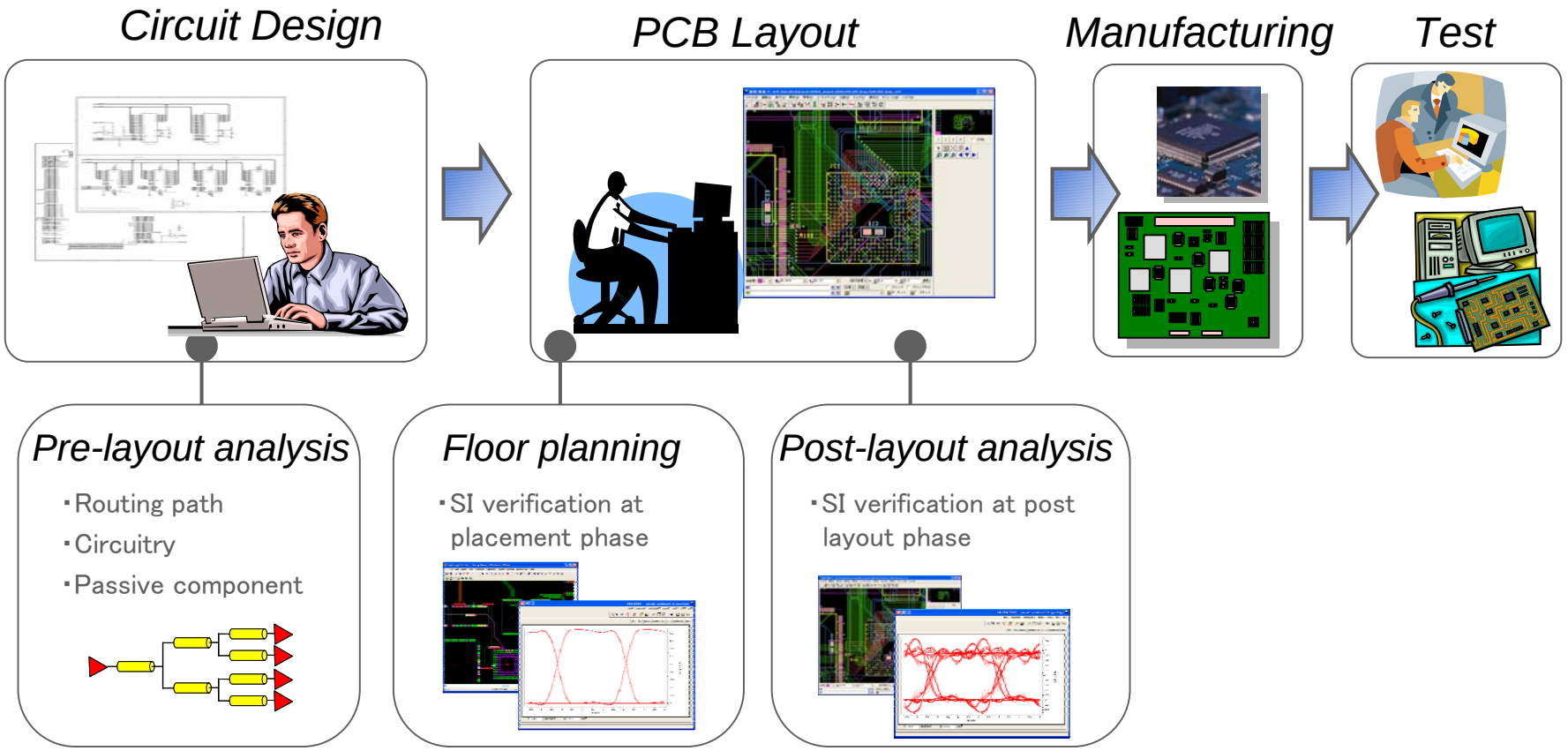
IBIS diffusion status



Looking overall, IBIS environment is thoroughly satisfied.

IBIS Simulation Flow





Trend in use of IBIS

- *Division-of-roles type usage i.e. Operation by Full-time Analysis Engineer is very common.*

- *Operation by Normal Designer is much less common (different from each customer).*

Why?

Investigate the cause by listening to the designer's voice…

Voice of Designers

Let's use Simulator!

Obtain Models

Import Models

Simulation Setup

Execute Simulation

I have no idea if I can ignore the various messages which appear during IBIS import.

Are the models set correctly by this operation?

I don't understand well how to setup the Simulator.

I cannot use the simulator at once due to a complex preparation work!

Required preparation task for analysis

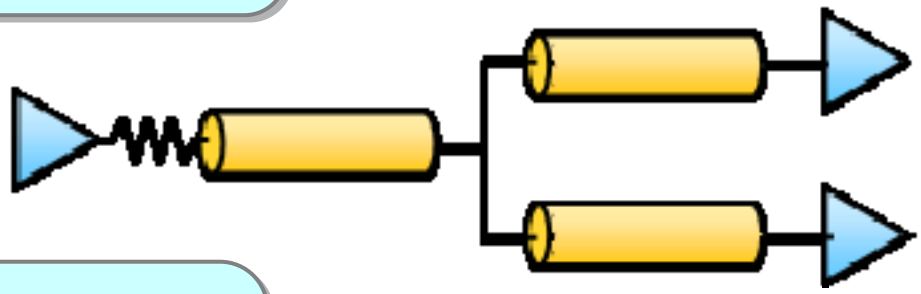
Stimulus setting

(Input pulse pattern)

66, 133, 200MHz, etc.

Circuit data creation

LVDS, LVTTL, SSTL, etc.



IBIS model preparation

- *Import*
- *Check*
- *Assignment*

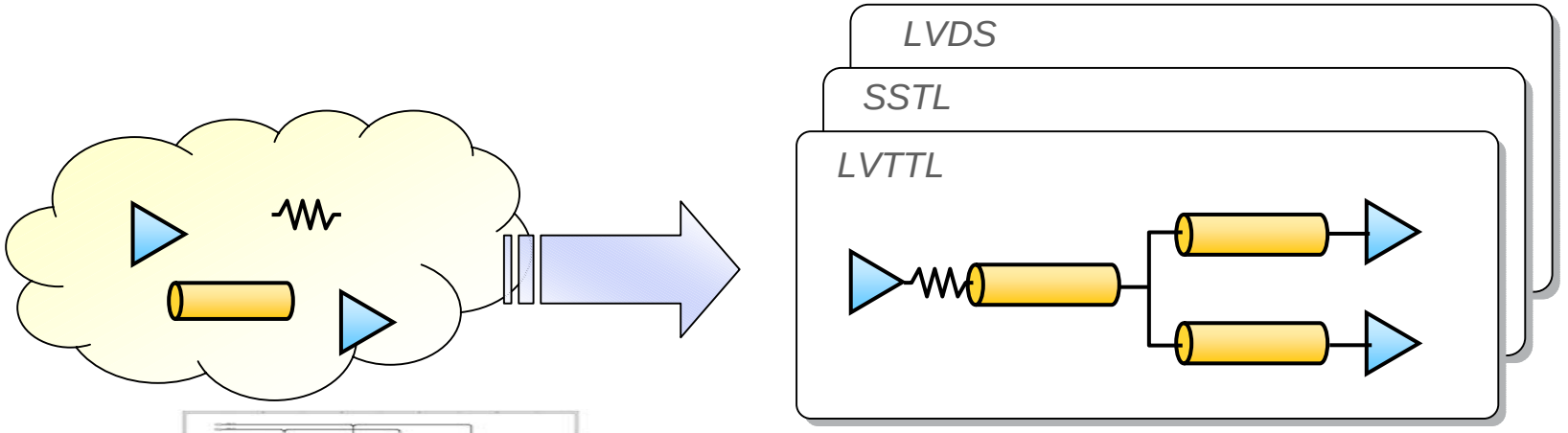
TL model preparation

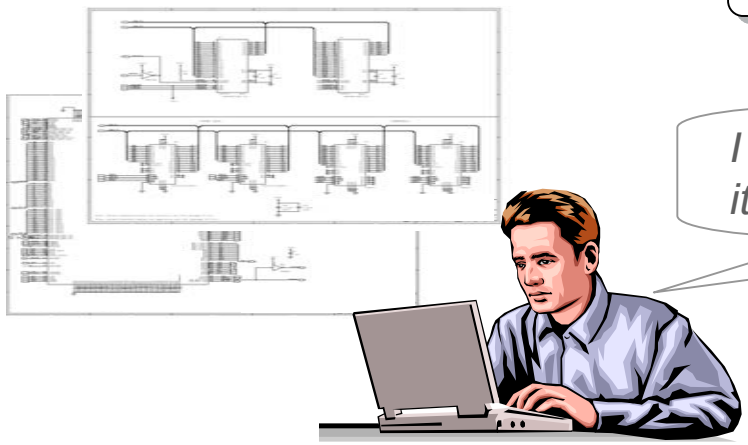
Strip, Micro Strip,
Differential pair

Complicated preparation task can be reduced by providing these initial templates.

What Simulation Kit solves

Create the circuit data for analysis purpose





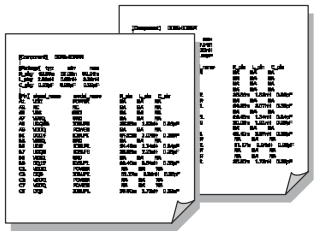
I don't remember the operation well, hence it is tough to create it from scratch.

Provide the circuit data for analysis corresponding to various I/O buffers.

What Simulation Kit solves

Preparation of IBIS models

Model Import



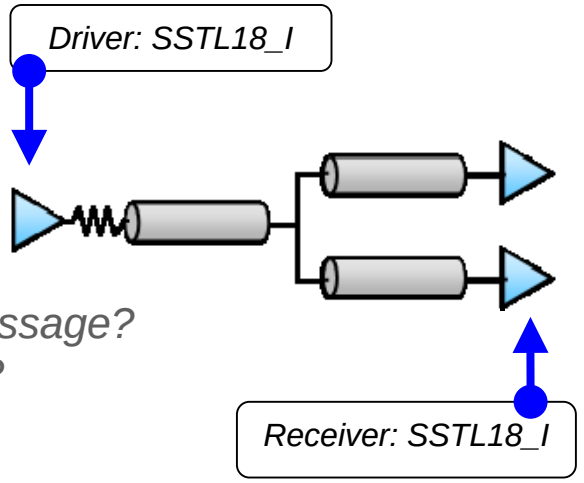
It is painful to set up the models one by one.

Assignment

Model Library

Check

IBIS Checking
Warning ……..
Warning ……..
Warning ……..



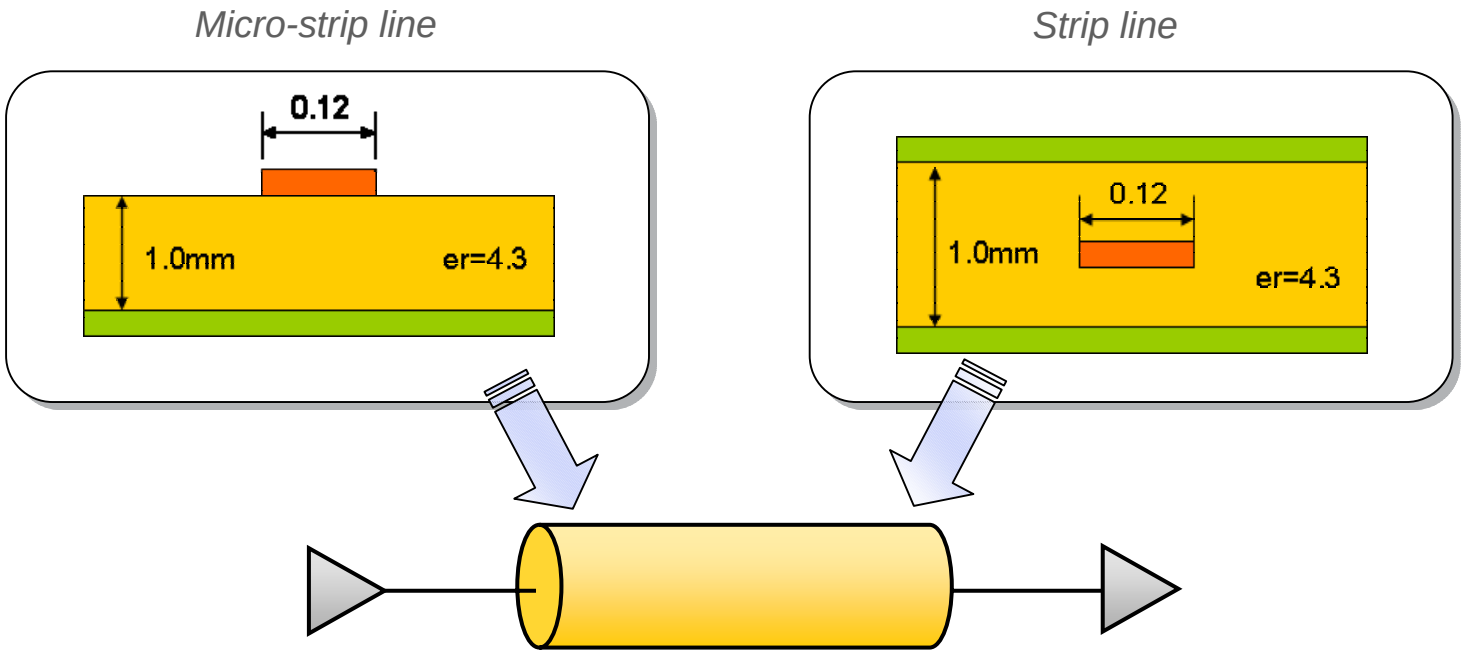
What's meaning of this warning message?
Are there any problem with Models?

All processes from the model import to the model assignment are implemented in advance.

What Simulation Kit solves

Preparation of Transmission Line Model

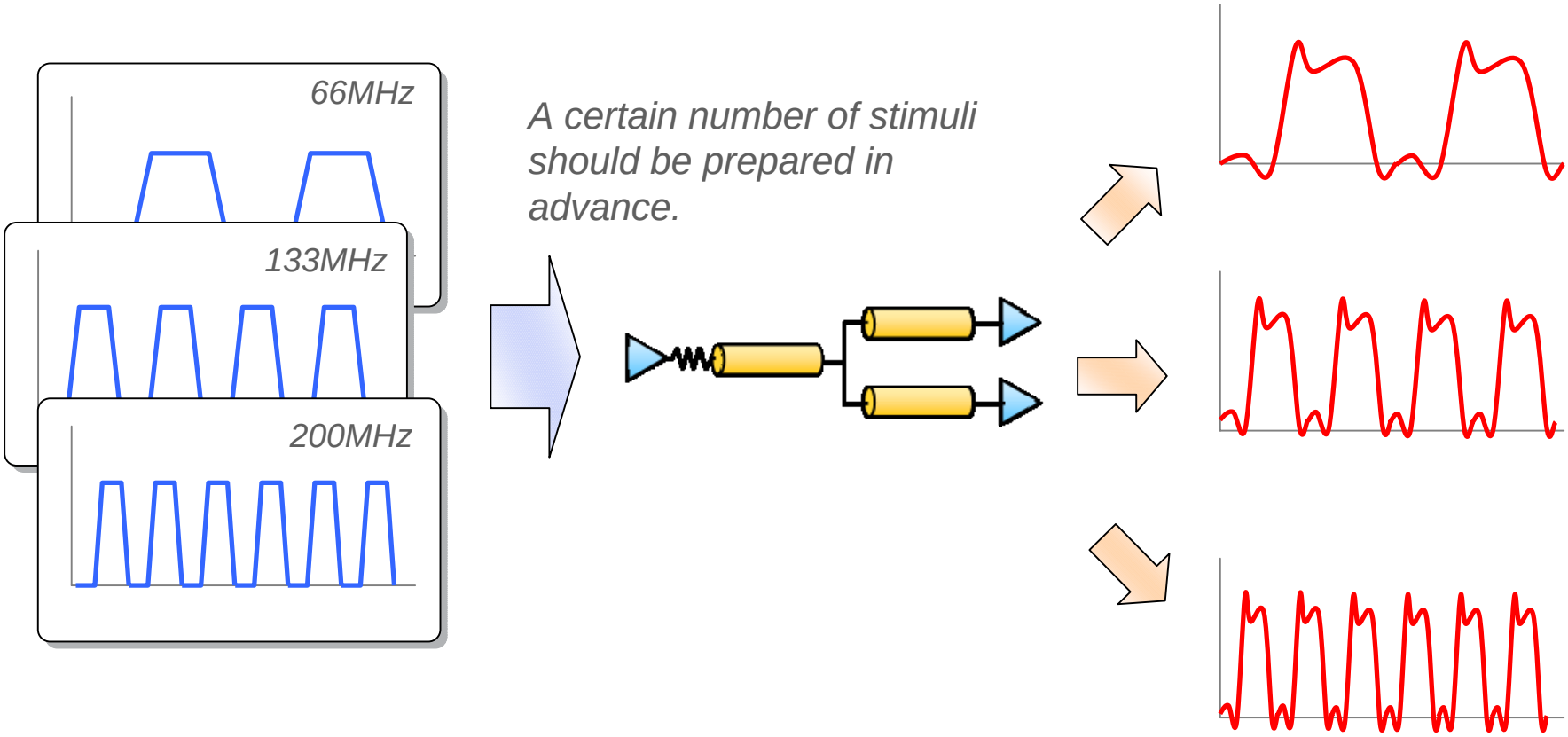
TL model preparation also takes time.
Provide the template or something is required.



Template of the cross-section models of the transmission line is pre-defined.

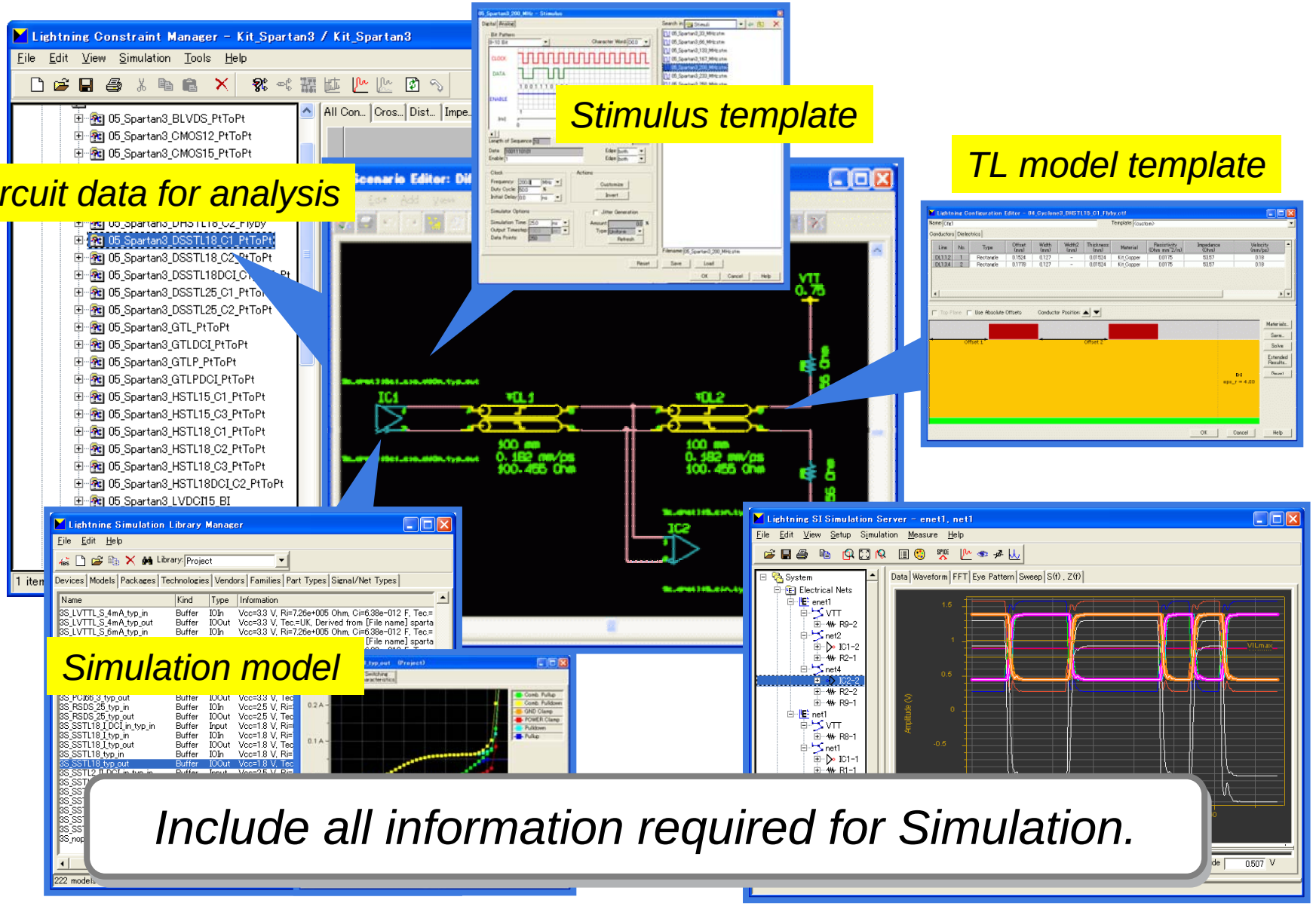
What Simulation Kit solves

Setup of stimulus (input pulse pattern) for Simulation



Several Templates of stimulus for simulation are predefined.

Contents of Simulation Kit



Include all information required for Simulation.

Simulation Kit Release History

17-Oct-2006	Release the Kit for Altera Stratix II FPGA
13-Sep-2007	Release the Kit for Altera Arria GX FPGA
17-Oct-2007	Release the Kit for Xilinx Virtex-5 FPGA
20-May-2008	Release the Kit for Altera Cyclone III FPGA
10-Oct-2008	Release the Kit for Xilinx Spartan-3 FPGA

We are continually expanding the simulation kit to promote the utilization of the simulator by the designer.