Brief History of Interconnect Analysis: Available tools for Signal/Power analysis use either repeated RC traversal or some implicit transformations involving model order reduction. These algorithms work fast when one considers luxurious pure linear RC lines, ignoring inductances, grounded resistances and coupling capacitances. Pure linear RC circuits naturally are stable and easy to realize because all the poles and zeros lie alternatively in the left hand plane of real axis. The laws of model order approximation are favorable in these trivial structures. We solve a generic problem for a given transmission line as a high level behavioral model. The driver details can be incrementally incorporated as and when available. RLC simulation of transmission line is achieved in N-Multiport multi terminal environment.

Existing tools fall short in the areas:

1. Timing interface emanating from characterization and interconnect model are not seamless. The limitations arise due to vital hidden models within spice which could not be popped up in characterization process due to model complexity. Varying assumption about interconnect models also add to inaccuracy in response.

2. Inductance is not covered at all when the speed of circuits is touching big heights

3. Coupling capacitance is crudely approximated in noise analysis which is hard to quantify and cannot be verified in test circuits

➢ Tool Capabilities:

- **Inputs**:
  - Transmission Line Parameters or Spice or SPEF
  - User Control File

- **Outputs**:
  - What If Analysis
  - Transmission Line Response to Analytic Function