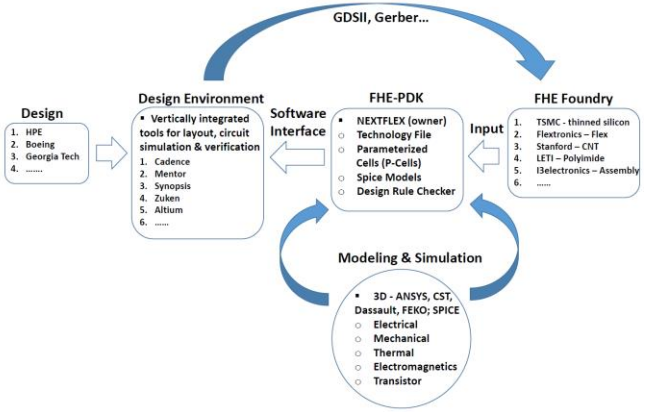
PC2.4 FLEXIBLE HYBRID ELECTRONICS PROCESS DESIGN KIT (FHE-PDK)

Objective:

- The objective of this project is to create an integrated flexible hybrid electronics (FHE) design and simulation flow based on FHE process design kit (FHE-PDK), as illustrated in the figure. The proposed open-source FHE-PDK, which does not intend to serve any specific FHE technology, can be applied to all kinds of FHE technologies and thinned silicon chips to create an application-design-manufacture ecosystem as done by the semiconductor industry today.



- FHE-PDK will interact with the various FHE foundries/fabricators within NextFlex through system design tools (ex. Cadence and ANSYS), circuit simulators (ex. *SPICE*), 3D design and layout tools (ex. *OrCAD* and *SpaceClaim*), and thermal and mechanical multiphysics modules (ex. ANSYS and COMSOL). The various FHE fabricators will provide the necessary information such as technology files, *SPICE* models, and design rules. Once a reliable PDK is developed, various use cases of FHE can be simulated for manufacturability thereby greatly facilitating the application-design-manufacture loop necessary for ensuring successful technology applications.

Team:

Lead: Dr. Jim Huang (HPE) and Dr. Suresh Sitaraman (GIT)
Partners: GIT, Stanford, UCSB, Cadence
Suppliers: Boeing, ANSYS