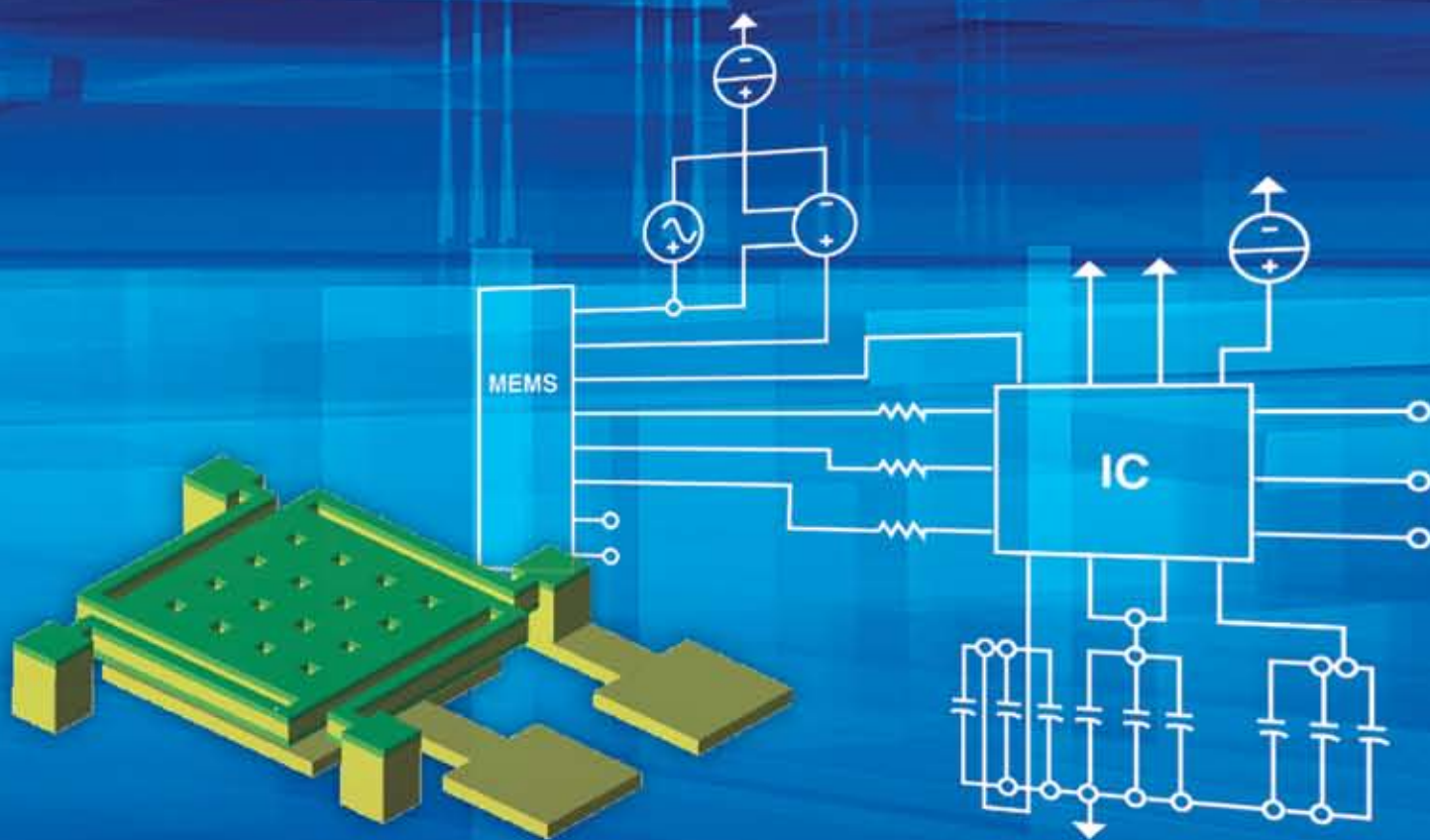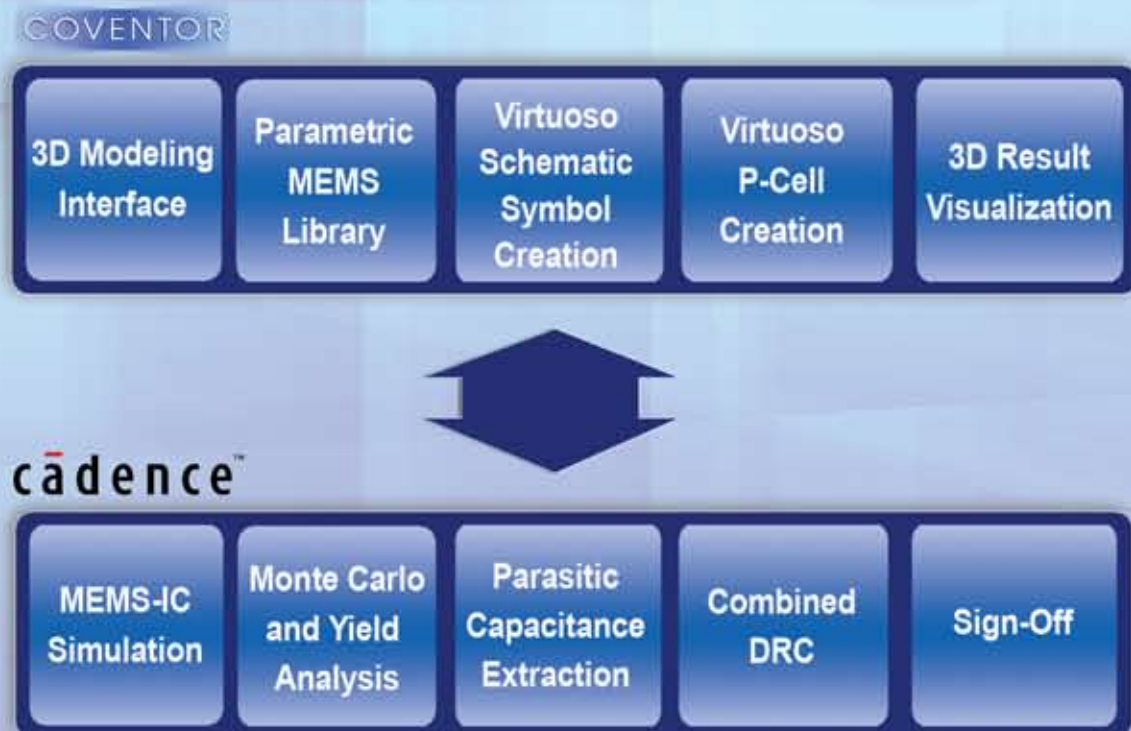# COVENTOR

MEMS+

A Common Platform for MEMS + IC

Coventor has created the first IC compatible MEMS + IC design flow. This will enable the acceleration of MEMS product development, resulting in faster time-to-market, more efficient use of resources, and the ability to meet cost targets and product cycle times required for today's consumer and mobile applications.

Two technologies, one methodology

Finally, an integrated platform for performing MEMS + IC design, MEMS + IC simulation, and MEMS + IC product development. IC designers can now include MEMS blocks in their designs just like other logic or analog blocks.

- Partnered with Cadence to develop an integrated design flow
- Partnered with leading MEMS companies to validate MEMS+
- MEMS+ uses Spectre and UltraSim as multi-physics simulators

Integrated MEMS + IC Design Flow

COVENTOR

| 3D Modeling Interface | Parametric MEMS Library | Virtuoso Schematic Symbol Creation | Virtuoso P-Cell Creation | 3D Result Visualization |

cadence

| MEMS-IC Simulation | Monte Carlo and Yield Analysis | Parasitic Capacitance Extraction | Combined DRC | Sign-Off |

MEMS Design in 3D

MEMS devices are inherently three-dimensional, which is why it is essential to have an intuitive 3-D user interface that guides the user through the 3-D design process. Based on validated and tested MEMS library components, the MEMS+ Innovator plug-in makes MEMS design clear and understandable. Each 3-D design is automatically connected to 3-D electro-mechanical behavioral models for simulations. MEMS+ also connects to Finite Element Method simulators or 3-D CAD tools.

Customizable Parameterization

Users can define and control variables and parameters for every aspect of a design, including 3-D geometry, physical layout, process technology, materialsand behavioral simulation models. This complete, user-customizable parameterization enables rapid design optimization and easy creation of derivative designs.
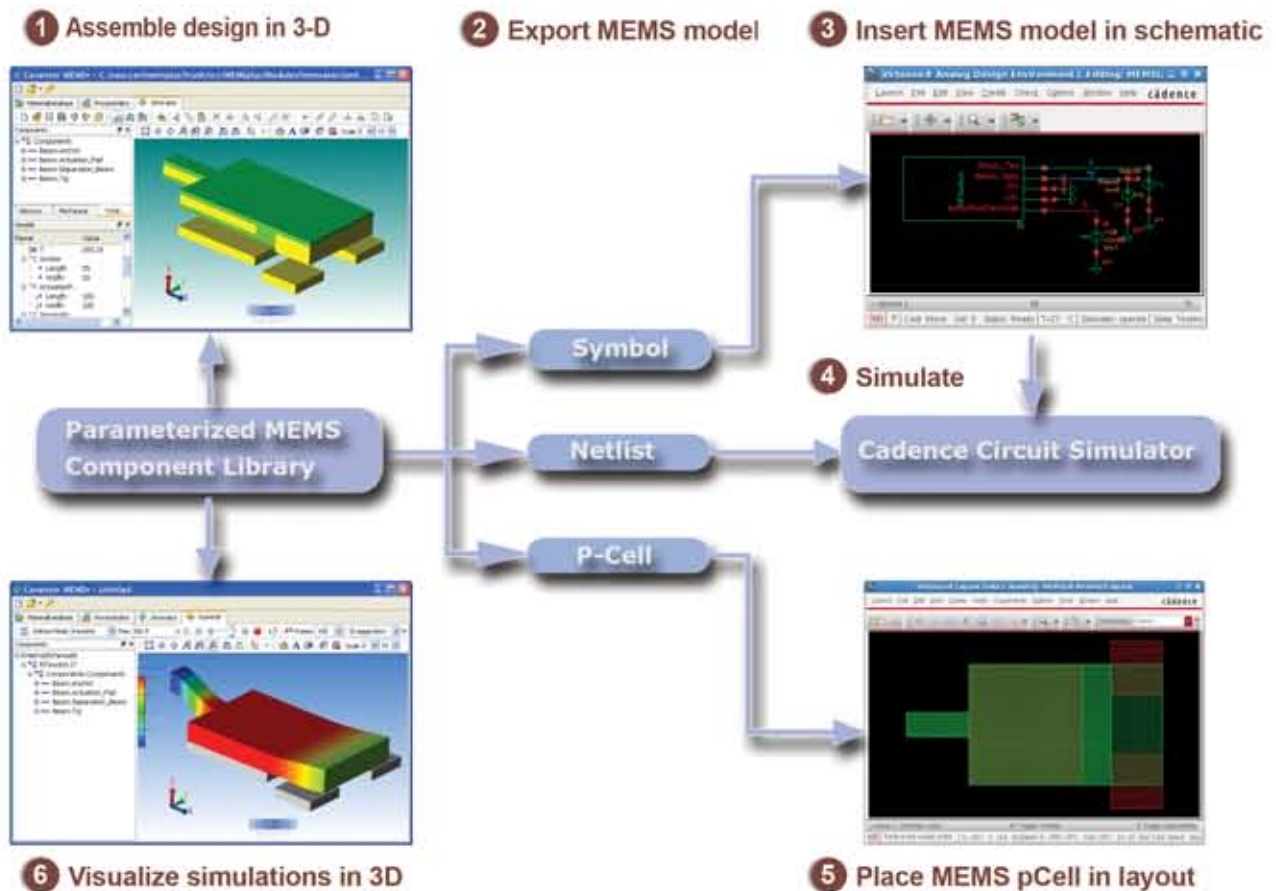
Seamless Connection to IC design

Until now there has been a clear disconnect between MEMS design and IC design software.
MEMS+ is the next generation MEMS + IC design software, connecting 3-D MEMS design with IC simulations and physical layout and even presenting simulation results in 3-D.

MEMS+

MEMS + IC Design

Integrating MEMS and IC Software

① Assemble design in 3-D
② Export MEMS model
③ Insert MEMS model in schematic
④ Simulate
⑤ Place MEMS pCell in layout
⑥ Visualize simulations in 3D

Parameterized MEMS Component Library

Symbol
Netlist
P-Cell

Cadence Circuit Simulator

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