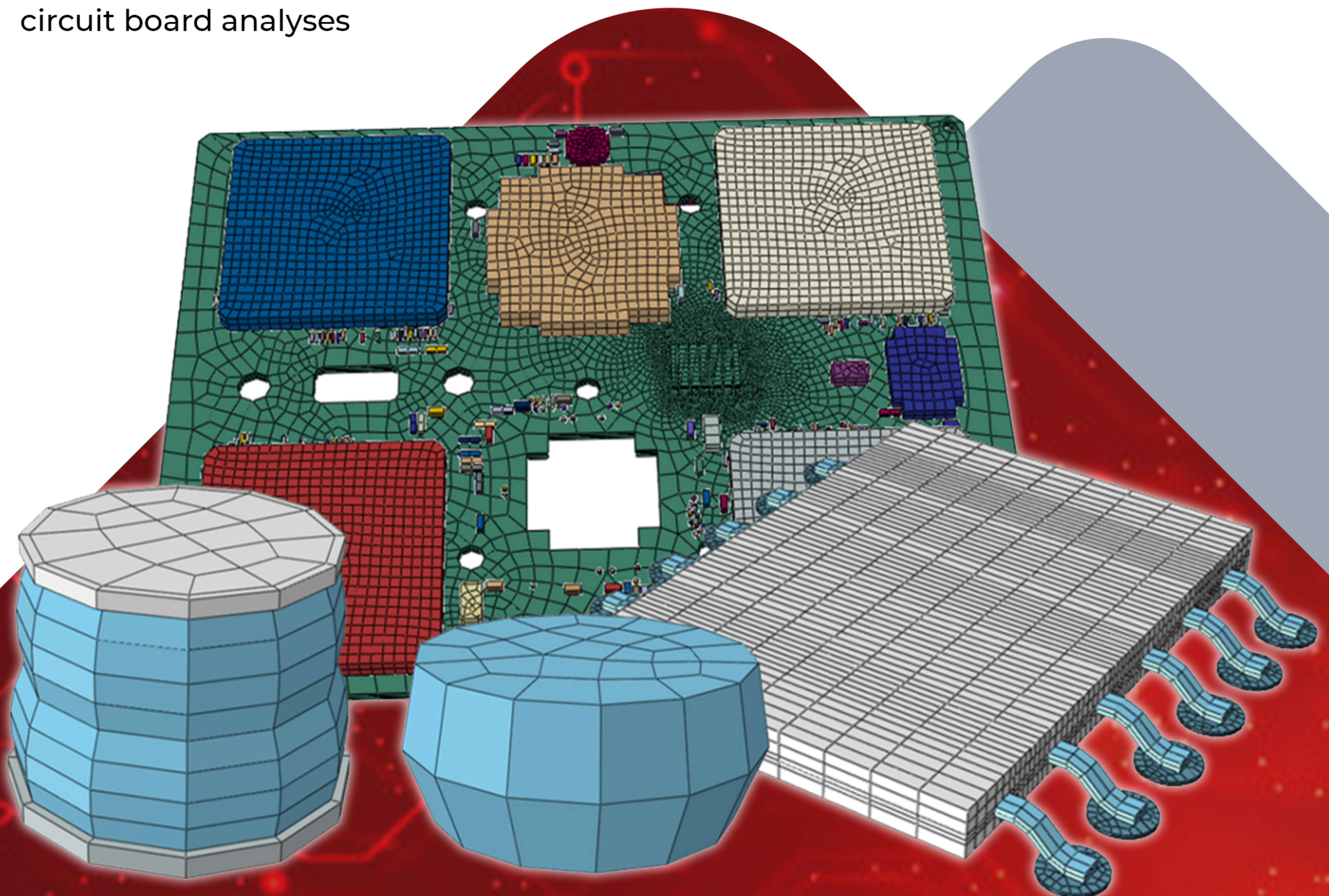


ABAQUS EXTENSION FOR PRINTED CIRCUIT BOARDS

This application brief describes the Abaqus extension QustomPCB which provides the capability of building 3D PCB simulations within the Abaqus/CAE environment. The tool automates the reading of circuit board layout files, including IDF and Gerber formats, and the building of the board, cutouts, holes and components on the top and bottom of the board. Additionally, QustomPCB contains advanced tools to generate leads and solder balls onto components for very detailed circuit board analyses

Over the years there have been extensive simulation capabilities put into Abaqus to model the complexities of circuits boards. This tool provides a platform to easily read in the board files, create the geometry, and mesh to PCB model. Then the advanced capabilities of Abaqus can then be applied to simulate the many scenarios that need to be considered when designing and analyzing printed circuit boards.



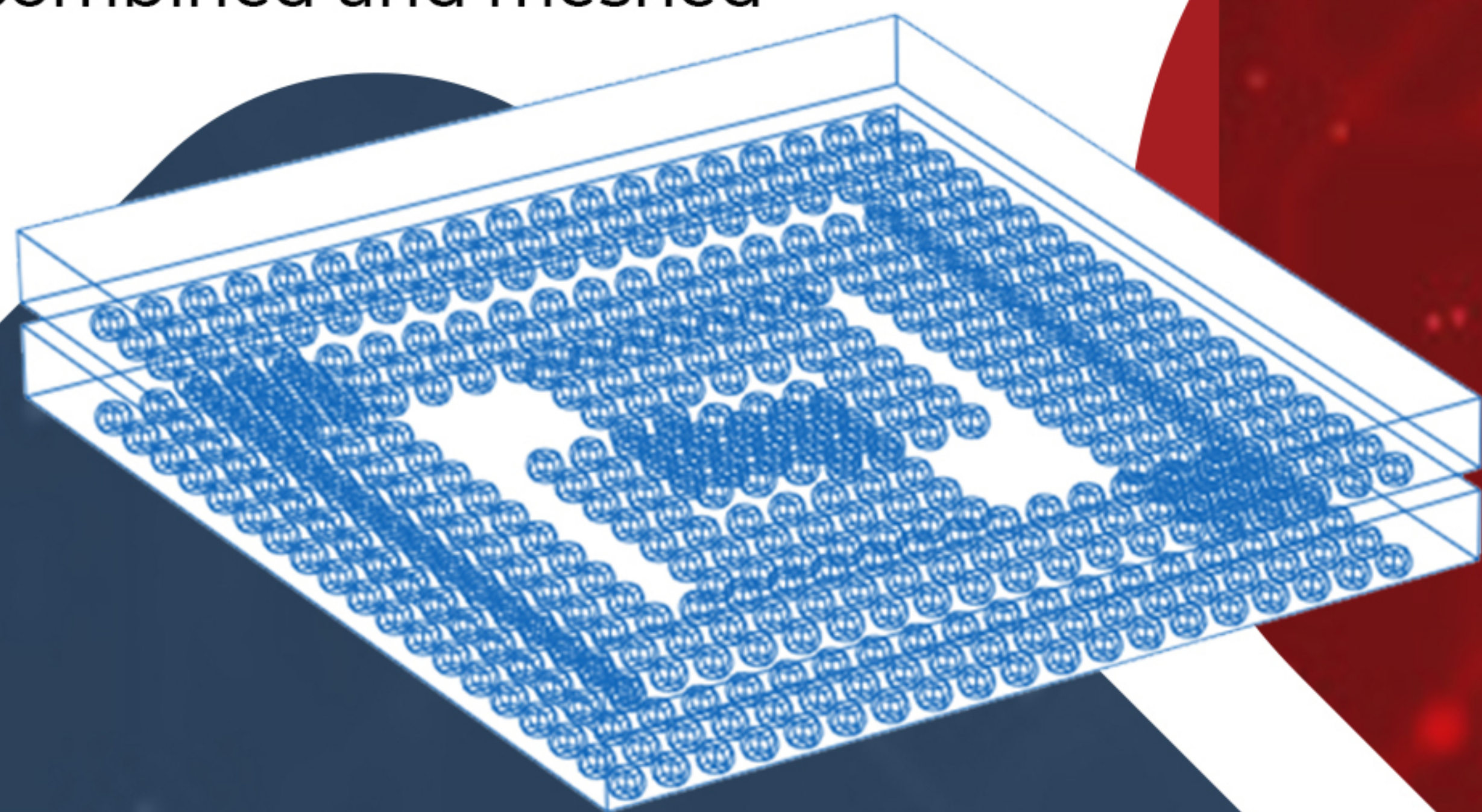
ABAQUS EXTENSION FOR PCB SIMULATIONS

Board and Component Import

- The board, components, and component instances are imported through the IDF and Gerber formats

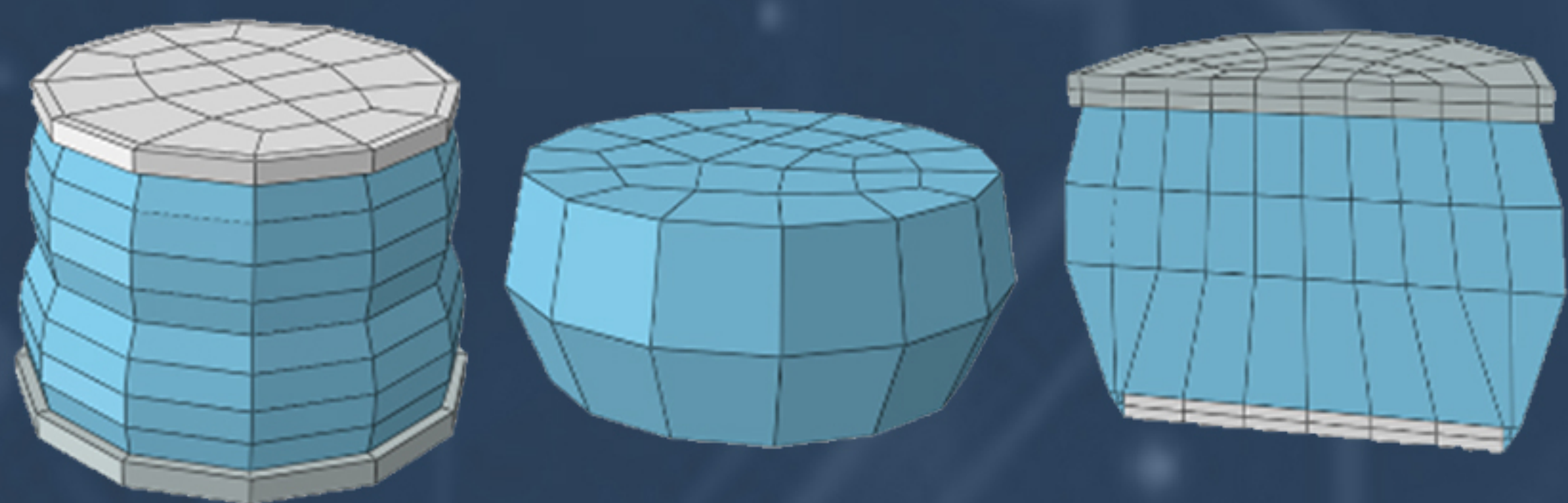
Component Packages

- Complex packages of components, solder balls, leads, and fillers can be built parametrically and automatically combined and meshed



Solder Balls

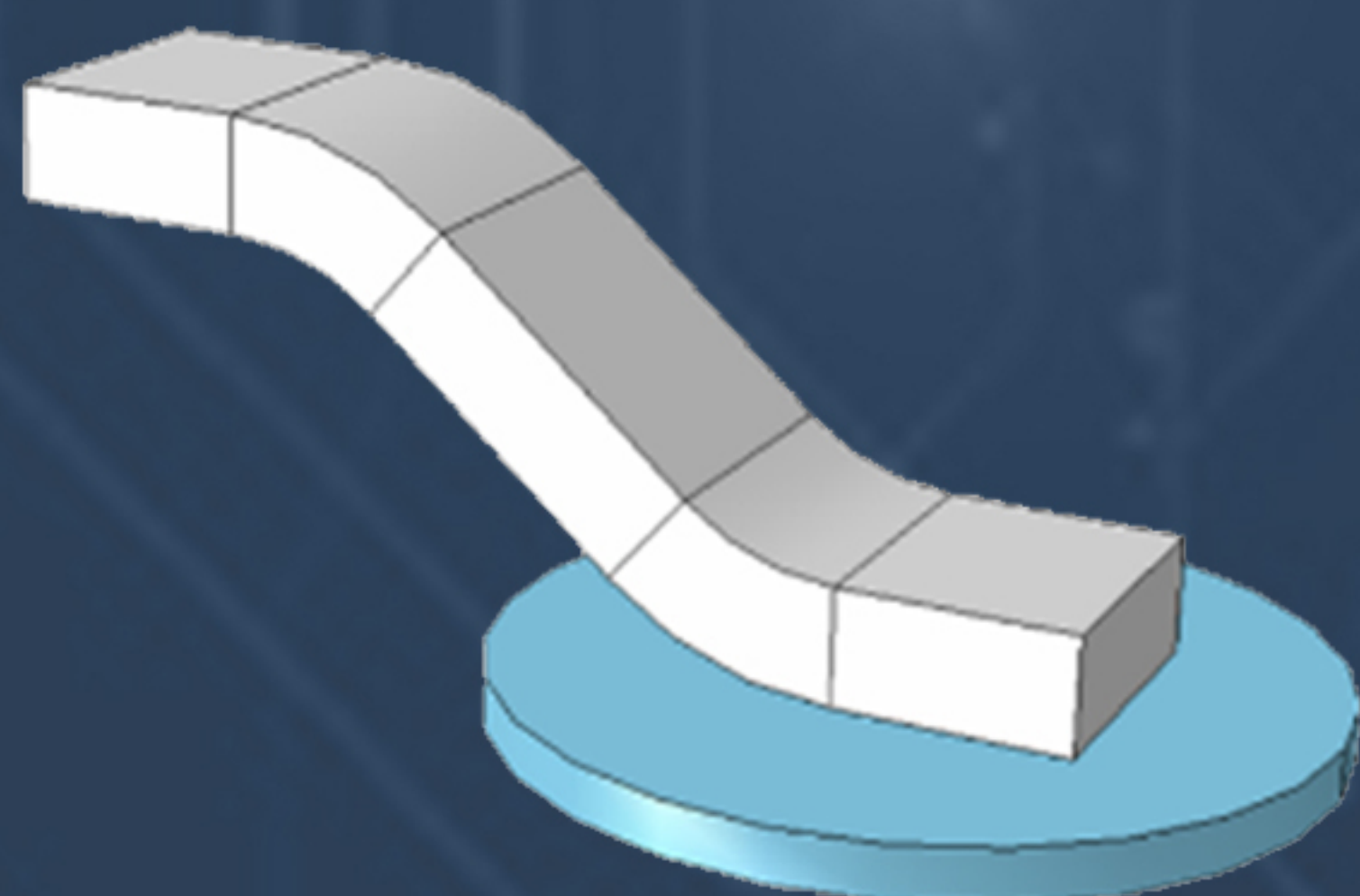
- A library of round, SMD, MD, square solder, and user-defined balls are supported, geometry or mesh based



- Solder ball locations are automatically imported from the Gerber files

Leads

- A built-in Gold-wing lead is supported, which may include a round and square pad, as well as, solder between the lead and pad or lead and board



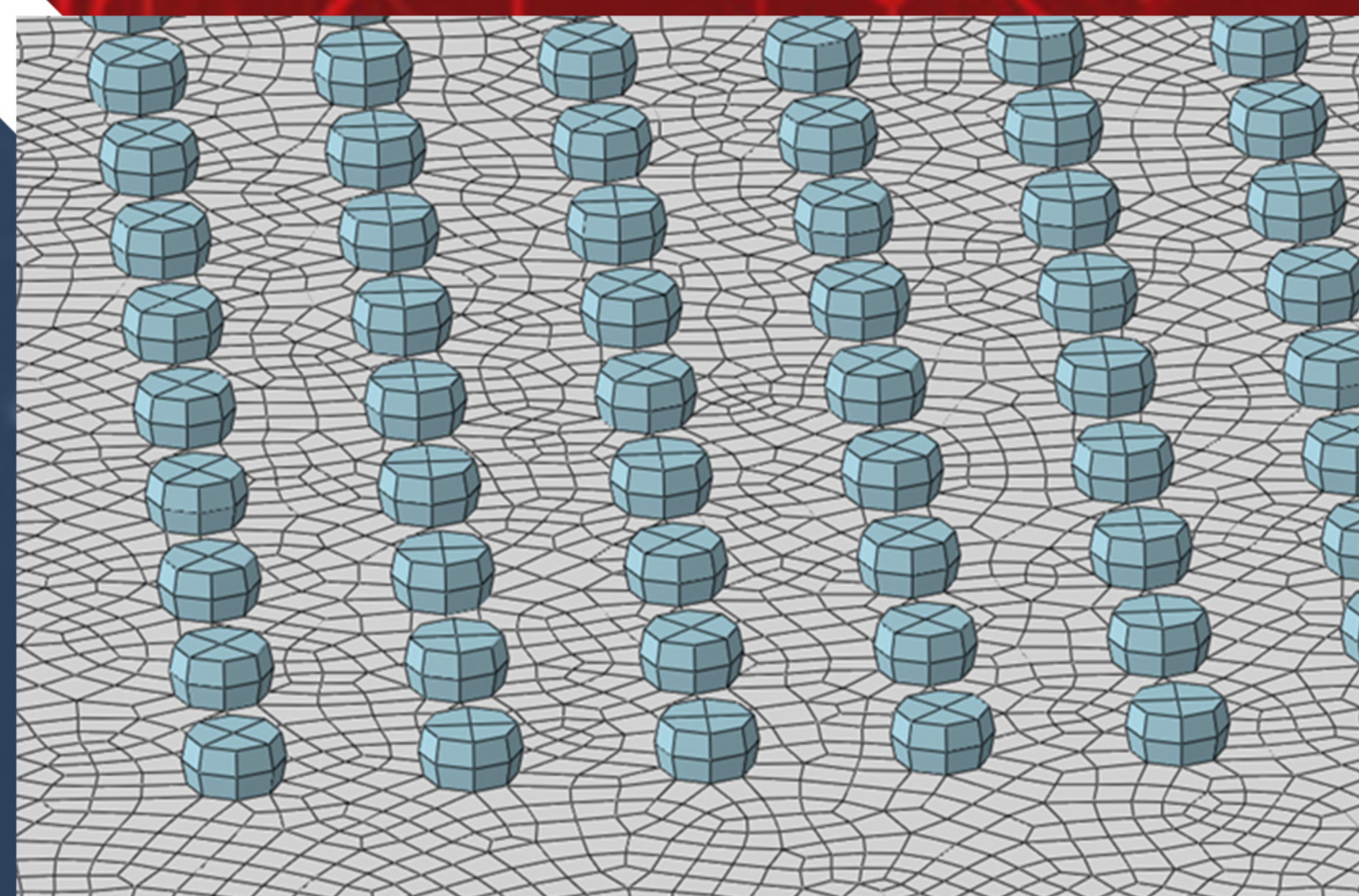
- A user-defined lead is supported. User may generate an arbitrary lead in Abaqus/CAE, then QustomPCB manages the placement along components and the merging or tying of the leads to the board and components

Cutouts, Holes

- Cutouts are imported from the board layout files and automatically generated.
- Customized cutouts of any shape can be generated in the board or a component

Meshing Controls

- Boards can be meshed with hex or tet elements
- The number of elements through the board and element size in the plane are supported
- Partitions on the board around individual components can be easily created to control mesh density



For More Information:

Please visit the QustomApps.com website for more details or contact.

Support for QustomPCB is provided by QustomApps, LLC. Support issues may be sent to

✉ sales@QustomApps.com

🌐 QustomApps.com