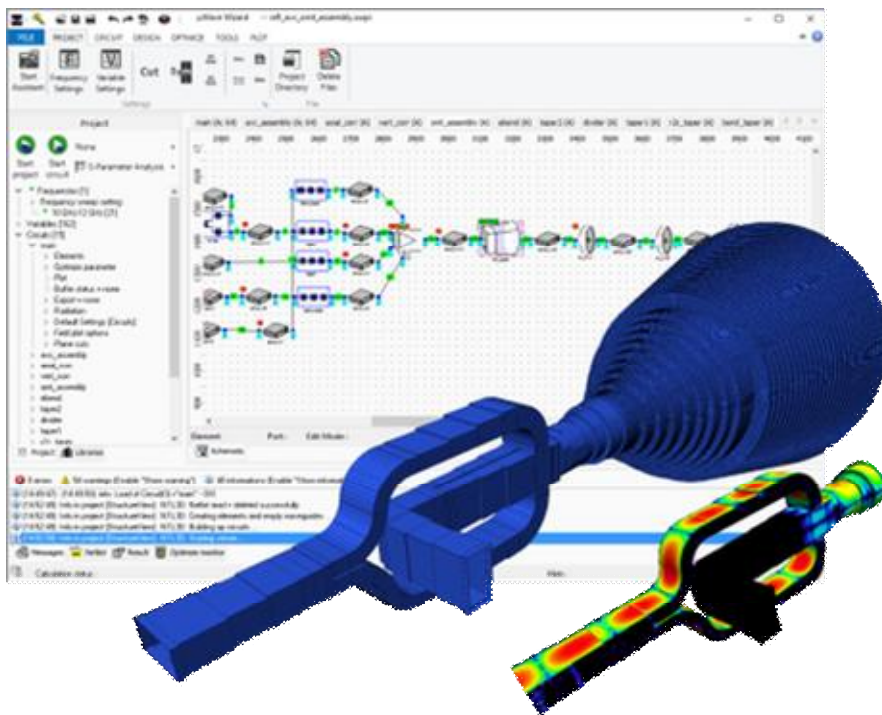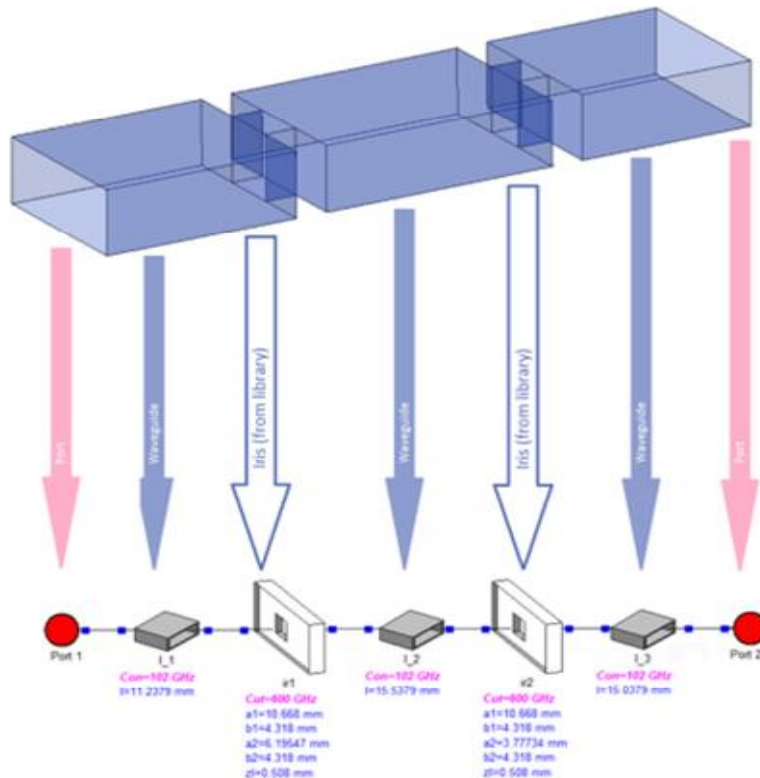# µWave Wizard™

µWave Wizard™ is a full wave 3D electro-magnetic design automation suite with an hybrid solver appraoch that combines the flexibility of the Finite-Element-Method (FEM) with the speed and accuracy of Mode-Matching (MM) for cost effective development of passive microwave systems and components, including antennas. The ability to parametrize component properties for control by different optimizers and the increased computational efficiency derived from solving individual circuit components before combining their respective solutions at circuit level are the benefits of this concept. Simulation time and development cost can be significantly reduced by composing RF microwave structures fast and easy using a combination of predefined parametric building elements and user generated elements instead of cumbersome drafting of complete 3D models of complex structures.

The **µWave Wizard™** can be optionally extended with a variety of useful add-ons.

µWave Wizard™ is a full wave 3D EM-design suite that combines the flexibility of Finite-Element-Method (FEM) with the speed and accuracy of Mode-Matching (MM) for the simulation and optimization of passive microwave systems and components, including antennas.

The proven concept of µWave Wizard

The conventional approach of drawing a complex structure entirely in 3D has been extended to cascade user-generated elements with pre-defined library elements. These libraries contain single elements such as irises, cavities and junctions but also complex structures such as OMTs, polarizers and horns. All elements are parameterized and enable the user initial designs as well as modifications within minutes. It also allows the user to optimize complex structures to meet challenging specifications. The µWave Wizard™ software suite offers optimizer and synthesis tools.

Complex structures can be composed from pre-defined library elements and user-defined elements in a schematic editor. By cascading simulated RF performance of all individual components, the frequency response of the complex structure can be accurately predicted. Each element is fully described by its modal scattering matrix. Applying a hybrid solver concept, each element is simulated using the fastest and most accurate solver for the respective geometry. The user can simply control accuracy and speed through the number of modes. The number of modes is defined by the cutoff ("cut") frequency of the highest considered mode.

Rapid design and fast execution times shorten the development cycle of RF components. These major advantages of the concept of µWave Wizard™ will provide you a quick return of your investment.