

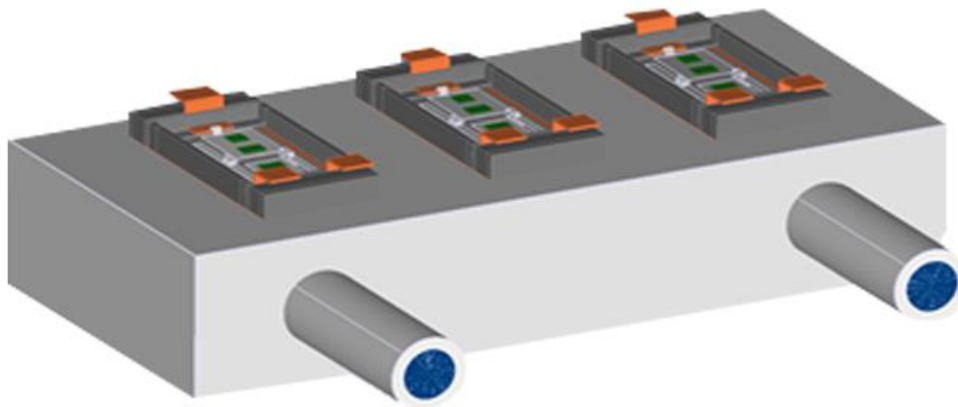
## ANSYS SYSTEMS Update in 2020 R1

ANSYS 2020 R1 contains two new systems solutions: ANSYS VRXPERIENCE Light Simulation and ANSYS medini analyze for Cybersecurity, along with a new Battery Wizard in ANSYS Twin Builder.

**VRXPERIENCE Light Simulation** makes the illumination of automotive product designs easier. It combines visual design and advanced engineering review by connecting Autodesk VRED design visualization software and ANSYS' physics-based lighting simulations. The result is a photorealistic visualization of vehicle interior and exterior lighting.

**ANSYS medini analyze for Cybersecurity** provides systematic analysis and assessment of security threats to cyber–physical systems, starting early in the design stage. **medini analyze** also supports safety analysis of the intended functionality (SOTIF) of systems, which makes autonomy (autonomous vehicles, air taxis, etc.) possible.

With the **ANSYS Twin Builder** Battery Wizard, you can easily construct battery cells and assemble them into battery modules. It also streamlines model creation and parameterization of ECM cells and modules.



## Systems Modeling, Simulation and Validation

As product complexity grows, so does the challenge of integrating individual components within a system to ensure they work together as expected. Systems modeling, simulation and validation allow you to create a complete digital prototype to understand and optimize the critical interactions between physics, controls and the environment throughout the product development process. And, by combining systems modeling with sensors and big data, you can develop a digital twin to manage your product's performance and maintenance after it has been deployed.

### 3D physics, embedded software and systems simulation

With ANSYS solutions for systems, you can build complete systems and digital twins. We offer the most advanced technologies for 3D physics simulation, embedded systems and software design. You can also assemble these different components into complete digital twins of software-controlled, multidomain systems that can be used throughout the whole product lifecycle — from the initial concept to product operation.

### Assess software, electronics and hardware designs together

For intelligent devices, the combination of software, electronics and hardware design challenges significantly increases the complexity of the product architecture and expands the scope of the engineering design. Intelligent, interconnected products have thousands of unique requirements that are served by a multiplicity of components, each with thousands of design parameters and interfaces that must be engineered, verified and validated.

### Validate and optimize product design, operations and service

Systems simulation informs design choices, provides insight and validates systems-level characteristics, function, behavior and performance. It goes beyond the design of individual parts and accurately captures the effects of interactions between these parts. Systems simulation also extends through testing and into the product operation phase to allow for predictive maintenance and optimal management of complex and expensive assets.

## Applications

VIRTUAL SYSTEMS PROTOTYPING

ELECTRIC DRIVES

POWER ELECTRONIC SYSTEMS

AUTONOMOUS VEHICLES AND ADAS

DIGITAL TWIN

BATTERY MANAGEMENT SYSTEMS

FUNCTIONAL SAFETY ANALYSIS

### **Systems Simulation Platforms**

Twin Builder

Medina analyze

Medini Analyze for Cyber Security

VRXPERIENCE









