



2023 FSG Siemens *Digital Twin* Award

For the 5th year - at FSG 2023, Siemens Digital Industries Software is sponsoring the “**FSG Siemens Digital Twin Award**”, a 10.000 EUR award to recognize 3 teams which have either used the most professional and innovative Digital Twin practices or have shown the biggest progress in their Digital Twin journey.

Do you have a digital, simulation-oriented representation of your racecar and its various subsystems? Did you use methodologies for optimizing your car's performance, collaborating within your team on the design, managing changes throughout the design cycle, or other digital twin concepts?

Don't hesitate to apply, even if you just started your Digital Twin journey!

4.000 EUR = 1st Place
3.500 EUR = 2nd Place
2.500 EUR = 3rd Place

To make it easier to apply, the award application is limited to two pages highlighting your main points. Additionally, you can reference supporting details in your FSG Engineering Design Report (EDR).

General Conditions

- FSG '23 teams can apply for the Digital Twin award by submitting an application (**max. 2 pages**) by **Monday, August 14th, 23:59 CEST**. You may include an appendix up to 3 pages with supportive information or graphics if you like. Please upload your A4 size PDF application to the FSG website (→ *My Team* → *Competitions* → *Deadlines*).
- On **Thursday, 17th August**, finalists will have the chance to present their Digital Twin concept in a **10-minute presentation** followed by a Q&A with the Siemens judging panel. Finalists will be contacted on Wednesday, 16th August to arrange presentation slots.
- Use of Siemens software tools is highly encouraged but not required. Such as **NX** for 3D-CAD, CAM and 3D-printing, **Fibersim** for big cost-savings with carbon composite manufacturability-simulation, **Simcenter STAR-CCM+** for 3D-CFD, **Simcenter 3D** for FEA, **Capital** for wire-harness design, **Simcenter Prescan** for autonomous driving simulation, **Motorsolve** for custom electric motor design, **PADS Professional** for circuit board design, **Simcenter Amesim** for mechatronics system and lap-time simulation, and other Siemens software tools. For no-cost grants of Siemens software, see this application form: www.siemens.com/plm/gaf
- For questions about the Digital Twin Award – email naz.aydemir@siemens.com

The 7 categories that are judged and rated numerically:

1. **Design** in the mechanical, electrical and software domain. Use of tools and processes across those domains with focus on integrating into each other. Examples:
 - Mechanical assembly of the full car
 - Wiring & Harness design
 - Electrical system design
 - Embedded software design & architecture
 - Additive design
 - ...
2. **Simulation** of components, sub-systems or full vehicle performance. Use of tools and processes in and across simulation domains. Examples:
 - Structural, thermal, aerodynamic, fluid and system simulation
 - Sensor & environment simulation
 - Design optimization using simulation
 - Level of simulation automation
 - Correlation of physical test and simulation
 - ...
3. **Product Data and process management** systems and processes handling the design, release and collaboration aspects of your development cycles. Examples:
 - Collaborative environment for CAD, simulation, software, etc. revisioning and management
 - Attribute based search of data
 - Know-how management
 - ...
4. **X-in-the-loop (XiL)** concepts bridging the real and the digital world. This is where your Digital Twin meets the real world. Originating from powertrain controls development, the XiL use cases are used for all kinds of validation campaigns. Examples:
 - Model-in-the-loop (early phase control development)
 - Software-in-the-loop (control/embedded software validation)
 - Hardware-in-the-loop (physical controller validation)
 - Driver-in-the-loop (driving simulator)
 - Vehicle-in-the-loop (environment simulation for driverless application validation)
 - ...
5. **Innovation** driven by Digital Twin concepts. Performance gains, new concepts or development effort reduction due to Digital Twin methods are examples our judges will be looking for.

6. **Professional** level of Digital Twin process shown in the Digital Twin award application and presentation to the Siemens judging panel.
7. **Improvement** in Digital Twin methods. The relative improvement of your Digital Twin methodologies from previous years are judged. Siemens Judges rate your Digital Twin journey and vision. Tell us where you started, where you are now and where you aim to be in the future of your Digital Twin strategy.