Simcenter Amesim for heavy equipment

Simcenter™ Amesim™ system simulation helps engineers to virtually assess and optimize performance of mechatronic systems

**A supportive solution since 1996**

**Broad range of machines and applications addressed**

- Thermal, hydraulic, electric and mechanical
- Multiphysics analysis
- Ready-to-use dedicated template models

**Improve product design and development process efficiency**

- Reduce harmful emissions
  "The modified coherent flame model accurately predicted the reduced emissions levels achieved with low computation times."
  Olivier Marchand, CRMT

- Reduce machine development time
  "This project is a quantum leap in engineering productivity in the construction equipment market. With process improvements in collaboration and co-simulation, Volvo CE has cut overall virtual prototyping time in early design phases in half."
  Jayanth Ammen, Volvo CE

- Validate mechatronic systems process
  "Simcenter Amesim is a powerful tool for modeling and real-time simulations."
  Dr. Truong Quang Dinh, Warwick University

- Improve machine NVH behavior
  "The baseline Simcenter Amesim model provided insight into the problem’s root cause and allowed engineers to perform parametric studies and evaluate possible countermeasures."
  Rohit Sara, Cummins

- Innovate without risk
  "Simcenter Amesim allows us to realize detailed models in the field of heat recovery, particularly in Rankine system components. Furthermore, the controller design can be performed in collaboration with design software."
  Dr. Ronald Saha, Liebherr

- Predict machine performance
  "The way we integrated Simcenter Amesim into our process covered everything from controls, fine-tuning, hydraulic systems and vehicle performance assessment. We saved a lot of time and we were able to mitigate risks."
  Attila Alonso, Komatsu Mining

- Improve reliability
  "With a traditional engineering approach, it would have taken the engineers several more months to identify the defect. Using Simcenter Amesim, it only took a few days."
  Parker Havens

- Reduce development cost
  "Simcenter Amesim dramatically saves us development costs that would otherwise have been lost through trial-and-error."
  Kang Byung Il, Doosan

- Reduce fuel consumption
  "Using the simulation capabilities of Simcenter Amesim, we were able to estimate the best way to release the stored energy by improving the control of the hydraulic, mechanical systems."
  Gilles Lemieux, Poclain Hydraulics

- Ensure machine safety
  "Using Simcenter Amesim has been a real asset and enabled New Holland to save several months of engineering studies as they worked on this safety optimization project."
  Frederic Legras, Fluidesign

- Monitor connected machines
  "A numerical model of an engine shows the high potential of Simcenter Amesim: it can simulate real combustion and heat transmission phenomena and allows user access to many quantities in every point of the layout."
  Dr. Marco Bietreitsato, Bolzano Faculty of Science and Technology

- Reduce product cost
  "We were not looking for a specific, tailor-made battery solution. Instead, we sought to combine off-the-shelf battery modules while optimizing the machine’s overall range, cost and footprint."
  Max Bonni, Mecalac

- Reduce machine development time
  "This project is a quantum leap in engineering productivity in the construction equipment market. With process improvements in collaboration and co-simulation, Volvo CE has cut overall virtual prototyping time in early design phases in half."
  Jayanth Ammen, Volvo CE

**A strong footprint in the heavy equipment industry**

- The 10 largest construction equipment companies use Simcenter Amesim
- Engineering of 80 percent of construction machines is supported by Simcenter Amesim

To learn more about how Simcenter Amesim helps heavy equipment engineering, visit: siemens.com/fueleconomy-energymanagement.