Siemens Digital Industries Software

Simcenter Amesim for heavy equipment

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

A supportive solution since 1996

BACKHOE Augers
sheep's foot compactor
BREAKERS FORKS **TRACKS**
heavy machinery GRADERS LOGGING
loader wheel combines mining
TRACTORS
tiltrotator forklifts BULLDOZERS
cranes excavators
TRENCHERS LANDSCAPE TILLERS
HYDRAULICS MOBILE log-skidder pavement removal bucket

thermal, hydraulic, electric and mechanical

120

Broad range of machines and applications addressed	Multiphysics analysis	Ready-to-use dedicated template models

Improve product design and development process efficiency

Reduce harmful emissions
"The modified coherent flame model accuracy combined with low computation times permit its application for cutting emissions of natural gas engines within Simcenter Amesim."

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 vehicle virtual prototyping time in early design phases in half."

Jonas Larsson,
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 Saha,
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 combination with design software."

Dr. Bouzid Seba,
Liebherr

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 Boni,
Mecalac

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."

Anab Akanda,
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 Hannifin

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 Bietresato,
Bolzano Faculty of Science and Technology

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

Kang Byeong 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 Lemaire,
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 Lagors,
Fluidesign

A strong footprint in the heavy equipment industry

More than **80** customer companies	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.

siemens.com/simcenter