

Corys Inc.

A French company creates simulators for the transportation and nuclear power plant industries.



From its 2,300-m² facility near the Jacksonville International Airport, Corys Inc. re-creates worlds with laser-like precision.

Combining the skills of physiologists, ergonomics specialists, trainers, software developers, graphic designers and modeling experts, the company makes training and engineering simulators for the rail transportation industry and nuclear power companies.

"I like to give the analogy of the flight simulators because everybody knows a flight simulator trains pilots to fly airplanes," says Nicolas Lacand, CEO of Corys Inc. "We do the same, but for locomotives."

Annually, Corys tackles between 10 and 20 simulator projects, with each project taking between 10 and 14 months. All phases of the project, from design and development to assembling and wiring are handled at the Jacksonville plant. Corys Inc. has approximately 40 employees. Most are engineers, but some are graphic artists hired to help re-create a real-world experience for trainees.

For the train simulators, Corys designs and builds replicas of the individual train's control systems, the locomotive's interior, and the 3-D world around the train in its actual location. Each station on a commuter

route is unique, so the engineers design software that replicates virtual features of the actual operating environment.

"We give them the same experience they would have in real life," Lacand says.

Similarly, Corys designs and builds training simulators for nuclear plant operators. For these simulators, they re-create the control room of a nuclear power plant, so operators can rehearse scenarios they may encounter on the job.

Once the simulators are complete, they are shipped to the customer. A Corys employee then teaches the trainer or on-site engineer how to operate the training tools. The scale of the finished product can vary from the size of a laptop up to about 1,600 kg.

Corys serves customers throughout the U.S. and Canada. Though they have a few competitors in both markets, the company controls about 75% of the nuclear power training simulation market and the "lion's share" of the railroad transportation simulation market — about 85% — in the U.S.

Why Florida?

A subsidiary of Corys T.E.S.S. in Grenoble, France, Corys Inc. started its U.S. operations in St. Marys, Ga. As the company grew and a larger facility was required, it moved operations south.

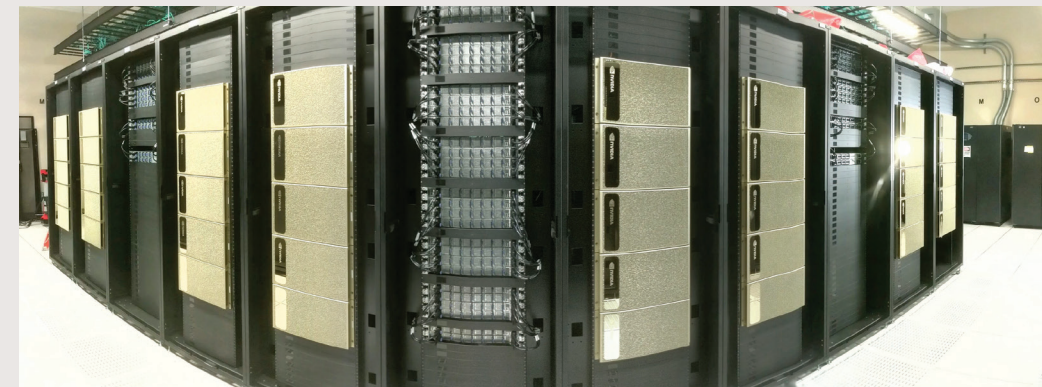
CEO Nicolas Lacand cited two main factors for selecting Florida and Jacksonville:

- ▶ The lack of a state income tax
- ▶ Proximity to an international airport

"We were excited to move down to Jacksonville," Lacand says. "We all travel quite a bit for our customers, and our customers have to come to us as well, so that's very convenient."



Nicolas Lacand



The TOP500 Project, which rates supercomputer systems worldwide, ranked UF's HiPerGator A.I. facility No. 22 worldwide and No. 3 in higher education worldwide for speed. The machine ranks No. 2 worldwide in the Green500 category, with a 29.52 gigaflops/watt power-efficiency.

RESEARCH ASSET

HiPerGator A.I.

The University of Florida's artificial intelligence center is among the top such facilities in the world.

A multimillion-dollar donation has enabled the University of Florida in Gainesville to become a leader in artificial intelligence education and research nationwide.

Former alumnus Chris Malachowsky, in partnership with Nvidia, the Silicon Valley-based technology company he co-founded, gave UF a USD60-million to USD70-million gift in June 2020 to help create an A.I.-centric data center.

To realize the vision of the UF Artificial Intelligence and Data Science Initiative, the university invested another USD15 million to update the existing data center, and the state made a USD20-million recurring appropriation. With the money, UF will add 100 A.I. faculty to its existing 400-plus who are working in the field, says Provost Joseph Glover.

"We believe all sectors of the economy will increasingly employ A.I. as a tool, and we want our students to be prepared with those skills so they are equipped for jobs of the future, Glover says."

The donation from the Malachowsky-Nvidia partnership included an Nvidia DGX A100 SuperPod, which integrates 140 DGX A100 systems powered by a combined 1,120 Nvidia A100 Tensor Core GPUs. The supercomputer, called HiPerGator A.I., includes 4 petabytes of high-performance storage. An Nvidia Mellanox HDR 200Gb/s InfiniBand network provides high throughput and extremely low-latency network connectivity.

Armed with one of the fastest supercomputers in higher education, UF has made one of its missions to advance and apply an "artificial intelligence and data science ecosystem" across the university. "Our plan is to be turning out thousands of students per year who are educated about A.I. and competent in it," Glover says.

Creating a 21st-century, A.I.-savvy workforce is one of the biggest challenges facing the U.S. today, Glover says. "And

UF is determined to do our bit as a university to create that A.I.-confident workforce."

Currently, colleges around campus are modifying curricula across academic majors to incorporate A.I. into their curriculum and graduation requirements. In addition to educating UF students, HiPerGator A.I. can be used by educators throughout the State University System at no cost. Making the system available for educational purposes helps "the state of Florida build a 21st-century economy," Glover says.

HiPerGator A.I. will also assist faculty researchers on a wide range of A.I.-related projects. To elevate UF's A.I. research profile, the vice president of UF research created a USD1-million Artificial Intelligence Research Catalyst Fund. A team of faculty

evaluated 133 proposals from across the university suggesting ways HiPerGator A.I. could help with their research. As a result, 20 faculty teams were awarded USD50,000 each for A.I. projects. The researchers will use UF's supercomputer to analyze vast amounts of data and predict solutions in everything from health care to agriculture.

A sample of the projects:

▶ Researchers at the Herbert Wertheim College of Engineering will explore identifying biomarkers that could enable early detection and treatment of

Alzheimer's disease.

▶ UF's College of Journalism and Communications has a project to integrate machine learning and social science theories to identify cultural bias in media by studying language usage in news coverage.

▶ The Florida Museum of Natural History will use A.I. to extract and mobilize new information about plants from the millions of historical plant specimen images currently available at UF. Data will provide baselines for forecasting long-term ecological and biodiversity trends, with impacts on both conservation and agriculture.

▶ The UF College of Pharmacy will explore ways for computers to learn to suggest new molecules while generating new drug suggestions that incorporate the desired traits.

▶ The College of Design will use A.I. and machine learning to track past and present land-use patterns in Florida to simulate future impacts of anticipated changes in land developments.

— By Laura Hampton



Joseph Glover