

Making the Leap to Campus-Wide Licensing

Longtime ANSYS partner LEAP Australia is helping Australasia's leading universities to embrace license bundling to expand research and teaching objectives.

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For more than 17 years, LEAP Australia — Leading Engineering Application Providers — has helped universities across Australia and New Zealand to leverage the benefits of ANSYS software for advanced research and educational programs. Every year, in classrooms and labs across the continent, thousands of future engineers first encounter the power of simulation software using ANSYS tools.

As they perform academic exercises or support faculty research projects, these students prepare for future careers in which they'll use ANSYS solutions to verify product and system performance in a virtual testing environment. Given the broad acceptance of simulation tools by Australian industry and government research teams alike, simulation skills using ANSYS software have become a prerequisite for students at graduate and undergraduate levels.

As a long-standing ANSYS channel partner, LEAP has helped every leading university in Australia and New Zealand to specify, install and support their simulation suites. LEAP's experience shows that universities typically encounter some challenges in leveraging the full scope and power of the software. Often, individual research groups lack the generous budgets of industry customers or university IT departments — as well as the sophisticated procurement processes that enable them to consolidate licenses and take advantage of volume discounts.

In addition, individual university users sometimes are restricted by the narrow research focus of their academic department or research group, which means that they have access to a limited number of single-physics licenses. But increasingly, these researchers need to conduct multidisciplinary studies, for which multiple ANSYS software solutions provide great benefit.

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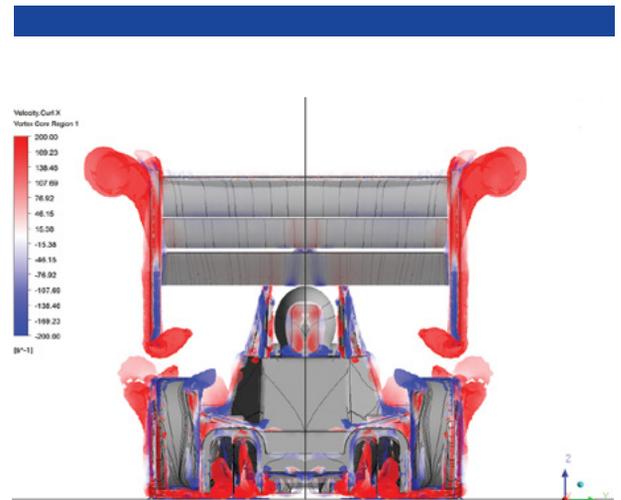


CAMPUS-WIDE SOLUTIONS
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As an example, at the University of New South Wales (UNSW) in Sydney, from an initial rollout of ANSYS single-physics tools within the School of Mechanical and Manufacturing Engineering, the full suite of ANSYS tools is now available for both teaching and research across all other engineering schools within UNSW.

LICENSE BUNDLING: A PRACTICAL, COST-EFFECTIVE SOLUTION

LEAP has partnered with many leading universities Down Under to help them overcome such obstacles and create the ideal academic environment for broader adoption of engineering simulation — one in which software is scaled for easy, cost-effective application by a wide range of users, across multiple faculties, students and researchers. Working closely with ANSYS, LEAP



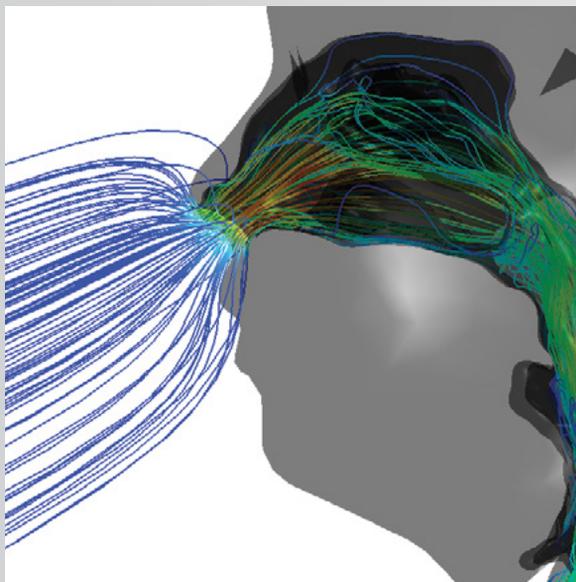
▲ Monash Motorsport uses simulation to optimize a Formula FSAE car. Shown here is semi-transparent vortex core iso-surfaces to indicate the direction of vortex rotation.

▶ Starting with an initial rollout within the School of Mechanical and Manufacturing Engineering at the University of New South Wales in Sydney, the full suite of ANSYS tools is now available for both teaching and research in almost all other engineering schools at UNSW, and has been used by the School of Civil and Environmental Engineering, School of Materials Science & Engineering, School of Chemical Sciences and Engineering, School of Electrical Engineering and Telecommunications, faculty of Built Environment, School of Mining Engineering, School of Biomedical Engineering, UNSW at Australian Defence Force Academy, Water Research Laboratory, faculty of Safety Science, UNSW Formula SAE team, the UNSW Solar Racing team and NSW Injury Risk Management Research Centre.

helps universities to benefit from academic license-bundling agreements, creating an environment in which more users across all departments can capitalize on the full multiphysics capabilities of the ANSYS suite.

In these bundling agreements — also known as campus-wide licenses — access to ANSYS software is centrally procured by a single group at a university, typically the IT department. By replacing individual department licenses with a broad, multi-user license, most universities are able to increase their license capacity and access to all necessary physics, while leveraging the cost advantages of a volume purchase. At Monash University, Scott Wordley found that “by making a large, multi-year commitment to a campus-wide research license and HPC bundle, we simplified the procurement process and increased the resources available to all our researchers.”

A Healthy Outlook at RMIT University



▲ At RMIT University, Dr. Kiao Inthavong uses ANSYS Fluent to understand how airborne particles are inhaled — without physical risk to human subjects.

RMIT University in Melbourne has benefited greatly from its campus-wide ANSYS license. Professor Jiyuan Tu, deputy head of research and innovation, says, “Not only can we run a large class, a CFD lab or a tutorial across multiple campuses to support our teaching, but it has also made ANSYS more accessible to all researchers.”

One researcher benefiting is Dr. Kiao Inthavong, who studies how inhaled airborne particles affect long-term health. “When environmental toxicity is involved, it’s not viable to conduct experimentation with human subjects. Our team uses ANSYS to perform integrated CFD simulations accounting for room ventilation combined with facial features and a detailed nasal-trachea airway to better understand links between respiratory health problems and the inhalability, deposition patterns and pathological effects of airborne particles.”

Tu notes that ANSYS is also increasingly used in undergraduate research projects, as well as in post-graduate research. In addition, it has positively impacted the quality of hands-on learning in large undergraduate classes.

According to Professor Tu, RMIT alumni are grateful for their exposure to ANSYS as students, with student feedback confirming that ANSYS makes it easy for them to engage in and become enthusiastic about very complex topics.

For ANSYS users themselves, the most obvious benefit is the ability to explore and access the full capabilities made available by the bundling agreement. For instance, civil engineering faculty and students who previously used only structural analysis software can apply CFD capabilities as well as other ANSYS tools to study the effects of multiple physical forces on their designs. This worldwide trend for professional engineering teams to become more interdisciplinary means that access to multiphysics solutions from ANSYS helps to better prepare students for the workforce; it has been shown to deliver better graduate employment outcomes. At RMIT University, Professor Jiyuan Tu reports that broad exposure to ANSYS products enabled by campus-wide licensing is viewed as extremely valuable by alumni who work as professional engineers: “The feedback from our graduates who have been working in industry — and are using ANSYS software now in their careers — has been extremely positive.”

From a user perspective, campus-wide licensing makes it easier and faster to access ANSYS software from multiple locations across a university’s network of labs

and classrooms. It once resided on individual CPUs or clusters; now ANSYS software is increasingly hosted on a centralized server to leverage advanced high-performance computing (HPC) capabilities.

TAKING FULL ADVANTAGE OF BUNDLING

Making the jump from individual licenses to a campus-wide bundle can represent a major transition for some universities — yet the benefits are well worth it.

In Australia, LEAP collaborates with the ANSYS academic team to support customers in easing this transition. Based on this experience, any university considering a campus-wide license should deliberate over these key elements as part of the license-bundling process:

- **Software sizing and specification:** Which ANSYS software solutions are needed by various engineering departments and research teams? What is the right mix of teaching and research licenses based on maximum class sizes and concurrent research needs? For each academic customer, ANSYS software can be configured in

the highest-impact manner to meet both research and teaching objectives.

- **Broad user training:** Campus-wide licensing puts the software into the hands of thousands of students, faculty members and researchers — but are they prepared to capitalize on its full capabilities? To maximize results for each university, ANSYS can deliver a training program that meets that institution’s specific needs.
- **Appropriate HPC specification:** Multiphysics and systems-level simulations can have large computational requirements, and university IT departments must be prepared to support the increased number-crunching that goes hand in hand with campus-wide agreements. ANSYS and its channel partners work with each university to provide sufficient ANSYS HPC licensing and to verify that the technology infrastructure is up to speed. Because increasingly complex multiphysics simulations require HPC to run larger models and provide

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adequate turnaround times for design optimization studies, this investment in HPC is worthwhile — and can be critical in protecting a university's capacity to maintain research funding and national reputation.

- **Ongoing support:** Despite similarities, every ANSYS academic customer is unique. The combined support efforts of ANSYS and its channel partners are critical to meeting each university's special challenges and research and teaching goals.

MAKING THE CHOICE TO BUNDLE

One of the most common oversights university administrators make is overlooking the potential to bundle their ANSYS licenses. Many colleges mistakenly believe that they don't have enough users, don't need multiple ANSYS products, or simply cannot afford a campus-wide license.

In truth, campus-wide licensing is surprisingly cost-effective when compared to individual licenses; it is becoming increasingly critical in delivering on the ambitious research and teaching goals of many universities. As educational institutions seek to address huge, complex problems, such as energy efficiency or smart systems, faculty members and researchers are working as multidisciplinary engineers, since they are increasingly being asked to collaborate across departments — and, in the process, embracing the trend to perform multiphysics and systems-level simulations. ▲

Reference

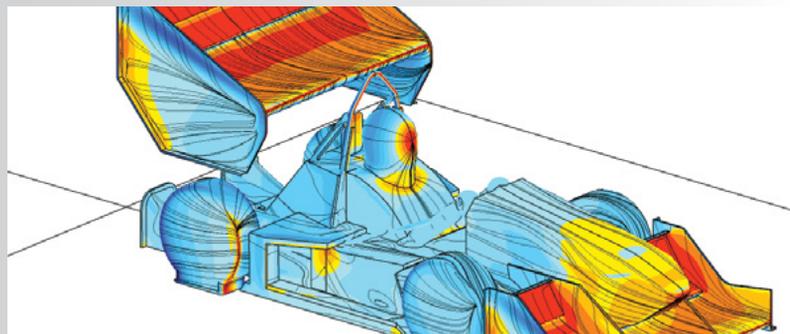
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ADDITIONAL RESOURCES



MORE ABOUT THE USE OF ANSYS SOFTWARE AT RMIT AND MONASH
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Accelerating Results at Monash University



▲ Student engineers on the Formula SAE team at Monash University use ANSYS CFD-Post to visualize pressure contours and surface streamlines of their car design. Here, yellow and red areas denote pressures above static pressure, and blue areas indicate pressures below static pressure. Surface streamlines help denote flow separation and re-attachment lines, as well as vortex activity impinging on vehicle surfaces.

The Formula SAE (FSAE) team from the Department of Mechanical and Aerospace Engineering at Monash University in Melbourne has relied on ANSYS software for more than a decade to optimize the design of its award-winning cars. Monash Motorsport comprises more than 70 undergraduates with a diverse range of backgrounds and engineering skill levels.

The Monash Motorsport team won their fifth consecutive Australasian FSAE Championship in 2013, with a strong performance on the track and in all static events. They are looking forward to competing with their 2013 car at Formula Student UK and Germany in 2014, and hoping to improve upon their 2012 third- and fourth-place finishes in these events.

To help new members learn to use ANSYS software, lecturer and FSAE team supervisor Scott Wordley has worked with LEAP to develop tutorials tailored for FEA and CFD analyses of common FSAE applications. While Formula SAE is highly competitive, this material is shared with other local teams to allow all students to harness the power of simulation.

Yet another benefit of the Monash ANSYS relationship is the flexibility of campus-wide software licenses. “Our ANSYS license bundle has really benefited researchers at Monash University. First, we save money by bringing users from different departments together to increase our purchasing power and maximize value,” Wordley explains. “Second, today our access is much more consistent and universal, instead of siloed. With our increasing reliance on high-performance computing, it makes sense to share both software and HPC clusters. Finally, we have eliminated needless paperwork and red tape that interfered with our researchers' already busy schedules. By making a large, multi-year commitment to a campus-wide research license and HPC bundle, we simplified the process and increased the resources available to all our researchers.

“Undergraduates benefit from bundling too, as we have enough academic advanced licenses to run ANSYS in all our engineering and science computer labs. We even have students install the software on their laptops and home computers. The tools are available, students know how to use them, and they see the value in the results they provide. And our students actually enjoy using ANSYS!”