AVL
University Partnership Program

AVL University Partnership Program

We support research and teaching activities in academia by offering our unique AVL University Partnership Program (UPP), addressed to Universities, Technical Universities, Universities of Applied Sciences, Technical Colleges and Technical High Schools. Within the frame of the program, we provide access to our comprehensive set of outstanding simulation, virtualization, and data analysis solutions. For our UPP partners we offer the opportunity to use the latest software technology of the world's largest independent company for the development, simulation and testing of powertrain systems for scientific research and educational purposes. Participation in the UPP enables the education of students at the highest possible standards and also offers young researchers to efficiently perform their research work on engine, powertrain and vehicle related component and system level analysis and optimization.

Details of Partnership – AVL RACETECH specific

AVL RACETECH offers its racing specific vehicle dynamics simulation tool AVL VSM™ RACE, and its data evaluation and analysis tool AVL DRIVE ™ RACE (hereinafter both together referred to as "AVL RACETECH tools") to universities and Formula Student teams within the AVL University Partnership Programme (UPP). However, the number of teams that can be supported is limited, and therefore a selection process has been established.

After the timely submission of an application, AVL RACETECH, at its sole discretion, decides which applicants will be granted one free of charge license for the AVL RACETECH tools, valid for the duration of one year. Over the course of the year, the successful applicants have to provide deliverables as outlined in Sec. 5 of this document. If the successful applicants would like to continue working with the AVL RACETECH tools after one year, they must submit a new application according to the deadlines published by AVL RACETECH.

Timeline for 2025 AVL RACETECH tools license

- Timeframe for submission of applications by FSAE teams / universities: Jul 1st, 2024 – Oct 31st, 2024
- Success / no success feedback to applicants by AVL RACETECH: Nov 29th, 2024
- Delivery of AVL RACETECH tools license to successful applicants: Dec 16th, 2024
- Validity of AVL RACETECH tools license: Dec 16th, 2024 - Dec 16th, 2025

Applications for a AVL RACETECH tools license

FSAE teams / universities wishing to obtain a AVL RACETECH tools license must submit a written application to AVL RACETECH. The application should cover the following aspects:

- Who are you?
- What are you planning to do with the AVL RACETECH tools? What for do you want to use it?
- Why should AVL RACETECH grant a license to you?

A more detailed and elaborate application enhances the chance to be selected. The application, together with the Contact Data Form, must be sent via email to **avlracetech@avl.com** within the submission timeframe as specified above.

Every applicant will receive feedback from AVL RACETECH if the respective application was successful.

Deliverables of AVL RACETECH to successful applicants:

- One dongle license of the AVL RACETECH tools for offline use (PC / laptop), valid for the duration outlined above.
- Installer for AVL RACETECH tools including installation instruction and software manual
- Application support via email and telephone (subject to manpower availability)

Deliverables of the successful applicants to AVL RACETECH:

Each applicant that has obtained a AVL RACETECH tools license must provide deliverables to AVL RACETECH.
The deliverables marked as "mandatory" must be deliv ered exhaustively, while from the deliverables marked as "individual", each applicant must select 2 out of the 4.

Mandatory:

- Bi-monthly meeting via TEAMS or WEBEX about current status:
  > The team to present:
  - What are you working on?
  - Did you encounter any bugs in the AVL RACETECH tools?
  - What are your current challenges in terms of vehicle dynamics simulation?
  - State of your AVL VSM™ RACE model
- Presentation to be delivered to AVL afterwards

- One end of year meeting presenting a recap of the use of AVL RACETECH tools, overview of results & findings, next steps, etc.; the presentation shown is to be delivered to AVL RACETECH afterwards as a pdf report

- Application of the AVL RACETECH logo on the racing vehicle (size & location to be mutually agreed)

- Mentioning AVL RACETECH in every social network post when competing, obtaining approval is mandatory (either by tagging AVL RACETECH or #avlracetech)

Individual (you must choose 2 out of those 4):

- Mentioning the use of AVL RACETECH software in the annual institute report; AVL to get a copy of this report

- Minimum of 2 papers on conferences / in journals per year acknowledging the use of AVL RACETECH software; AVL to get a copy of these papers

- Offering minimum 1 possibility per year for AVL RACETECH to present AVL RACETECH tools & services in front of university and industry

- Collaboration in minimum 1 R&D project per year (suggestion for topics to be brought up by university); R&D results to be provided in a report

AVL RACETECH Software Tools

AVL VSM™ RACE - Vehicle Dynamics Simulation

In order to simulate the dynamic behavior of a race car on the track with an Office PC / Laptop and in HiL applications (e.g. engine test beds, driver simulator, etc.), AVL has developed a real time Vehicle Simulation Model ("VSM") for racing applications. The computational tool includes models for engine, suspension, chassis, aerodynamics, differential, gearbox, tires, brakes, steering, driver and track. With VSM Offline (PC version) it is possible to virtually vary engine and vehicle set-up parameters and run several hundred laps within a few hours on a laptop or on a state-of-the-art PC.

AVL DRIVE™ RACE - Data Viewing and Analysis

AVL DRIVE™ RACE is a software tool for data visualization and engine and vehicle optimization on track, dyno and in the office using measured and simulated data. AVL DRIVE RACE evaluates more than 300 single drivability and performance criteria of engine, drive train, traction control, chassis and driver.

In general, AVL DRIVE™ RACE is used as an offline tool analyzing telemetry data files:

- Speeds up the data evaluation of track telemetry data
- Objective evaluation of Engine, Vehicle and Driver performance
- Objective evaluation of Drivability

FIND OUT MORE

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