

Mobility/Medical goes Additive

The VDI Student Competition

Engineering
our future

Competition Rules
11-13 April 2025, Stade

1 General rules

The rules should be read in conjunction with the program of “Mobility/Medical goes Additive – The VDI Student Competition” as well as website information under: www.vdi.de/mga

1.1 Objectives of the competition

“Mobility/Medical goes Additive – The VDI Student Competition” (hereinafter referred to as “competition”) is an international and interdisciplinary competition on 3D printing for students (no PhD students) on all aspects of Additive Manufacturing and digitization. The competition is carried out by the Association of German Engineers (VDI e. V.) in cooperation with the international network Mobility goes Additive e. V.

The objective of the competition is to sensitize students to the theory and practice of solving complex problems in interdisciplinary teams. In this context, the interdisciplinary and cross-sectorial potentials of Additive Manufacturing in connection with the opportunities and challenges of digitization in the field of mobility and medical technology shall be focused.

By means of a use case from the field of mobility and medical technology, which will be presented to the students with different scientific backgrounds on the first day of the competition, teams will compete using Additive Manufacturing techniques and currently available digital possibilities.

The challenge is to develop or improve a product and to fabricate (minimum as a prototype) this on site. To give teams the maximum design flexibility and the freedom to express their creativity and imagination there are very few restrictions on the overall use case for the product. Certain technical specification and various economic preconditions for developing the product including business case and marketing concept will be handed out. Additional factors to be considered include cost, ergonomics, maintainability, manufacturability, and reliability.

Each team will be judged by considering technical, economic, and communicative evaluation criteria. Full details of the competition evaluation criteria are provided in Clause 2. Not only

the realized result in the form of a new or optimized product plays a role, but also its implementation in the team during the first two competition days and its presentation in front of a jury of experts on the last day. This presentation refers to the product, the business model and the marketing concept adapted to the use case.

1.2 Rules authority

The rules are the responsibility of the competition committee and are issued under the authority of the Association of German Engineers (VDI e. V.). The current competition rules will be posted on the website (www.vdi.de/mga).

Ambiguities or questions concerning the meaning or intent of these rules will be resolved by the competition committee. Questions about the intent or meaning of a rule may be addressed to the competition committee.

1.3 Rules compliance

By entering the competition, the members of the teams and supervisors/mentors must comply with and be bound by these rules.

1.4 General authority

The Association of German Engineers (VDI e. V.) reserves the right to revise the schedule of the competition and/or interpret or modify the competition rules at any time and in any manner.

1.5 Timing

The competition will be held from 11 to 13 April 2025 (hereinafter referred to as “competition weekend”).

1.6 Registration

To register, please use the “Register now” button on the website (www.vdi.de/mga). Deadline for registration is 15 March 2025.

Every team member needs to be a member of VDI, which is free of charge in the year of participation. Team members not being a member of

VDI, must register for a membership using the following link: www.vdi.de/mobility

Unregistered attendance and guests are not allowed. All team members and supervisors/mentors who intend to attend the competition weekend must complete the formal competition registration. Please refer to the contact person given at the end of this paper or check the website (www.vdi.de/mga). Should you have to cancel your participation, please inform the organizer of the competition immediately.

1.7 Charges

Taking part in the competition is free of charge for all registered attendees.

1.8 Venue and arrival

Forschungszentrum CFK NORD
Ottenbecker Damm 12
21684 Stade

Directions to CFK NORD: [Google Maps](#)

1.9 Accommodation

You need to book a hotel, hostel etc. at your own expense.

At the [Havenhostel Stade](#) (Phone: +49 4141 54 111-0), we have reserved a limited number of rooms. If needed, rooms must be booked directly with the hotel by phone using the keyword VDI-MGA 2025. The contingent will expire on 15 March 2025.

1.10 Food and drinks

You will be provided with food and drinks on site free of charge.

1.11 Language

The official competition language is English in oral and written form. For official presentations, documents and talks English is required.

Teams can choose other languages within the working phases and for non-official talks.

1.12 Team size

Teams must consist of 3 to 8 team members.

1.13 Team composition

All teams have to consist of students (enrolled students only, no PhD students) from at least three different study courses, e.g. mechanical engineering, economics etc.

As VDI supports gender equality, a mixed team of different genders is expressly desired.

The team can consist of students from different universities. Nevertheless, one university must be selected and named as official university within the registration procedure as well as the competition. The supervisor/mentor shall be the official representative from the selected university (see Clause 1.18).

1.14 Existing employment relationship

Participation of dual students is only possible if there is no employment relationship between the student and the (training) company.

1.15 Individual eligibility

Eligibility is limited to individuals who are registered students at a recognized university/university of applied science (hereinafter referred to as "university") at the time of the competition registration.

1.16 Age

All team members must be at least eighteen years of age at the time of the competition.

1.17 Insurance

The participation at the competition includes a general insurance of the team members organized by the Association of German Engineers (VDI e. V.). Teams are asked to ensure that every team member has a valid liability insurance. In addition to that, team members from outside of the EU are required to have medical insurance covering participation at the competition.

1.18 Team supervisor/mentor

Each team is expected to have an official supervisor (mentor) appointed by the university. During the competition the team supervisor is allowed to accompany the team and will be con-

sidered by the competition officials to be the official representative of the university for the duration of the event.

The team supervisors will be responsible for guiding the members of their team on safety matters, including the highlighting of safety risks, and providing general instructions. In case the supervisor is not participating, the team captain will be responsible.

The team supervisor may advise their teams on general engineering, economics as well as project management theory but may not directly work nor directly participate in the development of the product, any documentation or presentation. Team supervisors may not fabricate nor assemble any components nor assist in the preparation, maintenance, or testing.

Teams may take organizational advice from official supervisors of the registered university. However, they must make all technical and economical key decisions themselves.

1.19 Equipment

Teams shall use centralized Additive Manufacturing machines/facilities (Fused Filament Fabrication) at the event location. At the 3D printer hub, supervisors will be giving advice on how to use the 3D printers. Thus, it is neither necessary nor allowed to bring 3D printers to the competition.

Each team is responsible for their own IT equipment including laptops, software solutions (CAD, CAE etc.), screens, keyboards etc.

Internet (Wifi), office supplies and the possibility of 2D printing will be provided by the Association of German Engineers (VDI e. V.).

1.20 Copyright

The participant grants a right of use for everyone free of charge with regard to the designs and texts (work results) developed in the context of the competition (§ 31 German Act on Copyright and Related Rights

(Urheberrechtsgesetz, UrhG)). The participant expressly waives his right of withdrawal according to § 31 a (1) sentence 3 UrhG.

1.21 Safety

The safety of team members, representatives of the Association of German Engineers (VDI e. V.) and other persons (e.g. sponsors) during the competition is of paramount importance. Teams competing have a duty to ensure that all activities which their members perform during the competition are undertaken with the safety of themselves and others in mind.

All team members must comply with any safety requirements or guidance issued by the Association of German Engineers (VDI e. V.)

1.22 Drugs and alcohol policy

The consumption of drugs and alcohol is forbidden during the competition phases. Consuming alcohol is allowed at the evening events without influencing the participants of the competition or the competition itself in a negative way.

Anybody suspected to be under the influence of any drugs or alcohol within the competition phase will be removed from the competition and may be required to leave the competition site entirely.

1.23 Data protection

VDI e. V. will continue to provide you with further information on similar topics and events in the future. The transfer of your data, except for the statutory purposes of VDI e. V., including the member administration, is excluded. Regarding the use of your data for the above-mentioned purpose, you can object at any time.

1.24 Photos and filming

During the competition video, photo and sound recordings will be made for the public relations of the organizer, the host, and the sponsors. By participating, you agree to their publication.

2 Challenge specifications

2.1 General remarks

The competition will consist of several evaluation criteria along a given use case to assess the various aspects of product development, the business case with financial plan, a marketing and sales concept, and the team appearance.

2.2 Scoring

Each requirement category consists of various topic-related criteria which will be evaluated by the jury. The results will be average points given in different criteria with different weights for categories. Details of the evaluation criteria are given in Tables 1, 2 and 3. The team with the highest added scoring of all judges wins the competition.

2.3 Publication of results

The overall result for each team will be published.

2.4 Penalties

The jury members may apply penalties as they feel appropriate for:

- a. any violation of the rules,
- b. operational practice considered unacceptable, or
- c. behavior which impacts on safety.

Table 1. Scoring of the product-related requirements

Technical evaluation requirement
Value proposition including problem definition and plausible solution
Design including technical feasibility, technical design, optimisation, simulation, innovative strength
Sustainability ecological, economical and social
Prototype
AM consideration

Table 2. Scoring of the business model requirements

Economic evaluation requirement
Market analysis including target group, market potential and share, competitors
Business concept including yield mechanics and economical feasibility
Financial plan including cost report, pricing, revenue stream
Marketing/Sales including marketing and sales strategy, brand identity

Table 3. Scoring of the team appearance requirements

Team appearance requirement
Team including competence and diversity, cooperation, behaviour
Pitch including professionalism, presentation, eloquence

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