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VDI-Gesellschaft Fahrzeug- und Verkehrstechnik

Mobility goes Additive - The VDI Students Competition

28 February - 1 March 2020

Mobility goes Additive e.V.
Im Marienpark 22, 12107 Berlin, Germany

Competition Rules

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1. General Rules

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

1.1 Objectives of the competition

“Mobility goes Additive – The VDI Students 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 shall be focused. Hence, it is planned to organize the three-day competition on a regular basis, at different locations within Germany, bringing together student teams from different universities to compete against each other.

By means of a use case from the field of mobility, which will be presented to the students with different scientific backgrounds on the first day of the competition, teams will compete with each other 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 pre-conditions 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 taking into account 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). The official announcements from the competition committee will be posted on the website and shall be considered part of, and shall have the same validity as, these rules.

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 and, where appropriate, responses will be posted on the website.

1.3 Rules compliance

By entering the competition the members of the teams and supervisors/mentors have to 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 28 February to 1 March 2020 (hereinafter referred to as “competition weekend”).

Competition Rules

1.6 Registration

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 persons given at the end of this paper.

The possibility of registration has expired. The list of participating teams is published on the competition 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

Mobility goes Additive e.V.

Im Marienpark 22

12107 Berlin

Germany

<https://mobilitygoesadditive.org/contact>

1.9 Accommodation

We are not able to offer you the possibility of an overnight stay on site. You need to book a hotel, hostel etc. at your own expense.

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 from at least two different study courses, e.g. mechanical engineering and economics.

The team can consist of students from different universities. Nevertheless, one university has to 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 1.17).

1.14 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. For Ph.D. students the participation is not allowed.

1.15 Age

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

1.16 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.

1.17 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 considered 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.

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

1.18 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.) or the host of competition.

1.19 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.

1.20 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 attend a safety briefing at the start of the competition and must comply with any safety requirements or guidance issued by the Association of German Engineers (VDI e.V.) or the host of competition.

1.21 Drugs and alcohol policy

The consuming of drugs and alcohol is forbidden during the competition phases. Consuming alco-

hol is allowed at the evening events without influencing the participating people of the competition or the competition as an event 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.

1.22 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.

1.23 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.

Competition Rules

2. Challenge specifications

2.1 General remarks

The competition will consist of a number of evaluation criteria along a given use case to assess the various aspects of product development, the business case, the marketing concept and the team attitude.

2.2 Scoring

Details of the evaluation criteria and the maximum points available to teams in each requirement category are given in Tables 1,2 and 3. In total the team can get a maximum of 1000 points. The team with the best performance in accordance with the scoring of the appropriate evaluation criteria will receive the maximum points available.

Other teams will receive points allocated in proportion to the team with the best performance based on their own performance.

Table 1. Scoring of the technical evaluation requirements

Technical evaluation requirement	Score
Product design	100
Performance	100
Reliability	100
Sustainability	100
Functionality / functional integration	100

Table 2. Scoring of the economic evaluation requirements

Economic evaluation requirement	Score
Product cost report	100
Business case report	100
Marketing concept	100
Business presentation	100

Table 3. Scoring of the team working evaluation requirements

Team working evaluation requirement	Score
Team working performance	100

2.3 Publication of results

The overall result for each team and each requirement category will be published.

2.4 Penalties

The judges may apply penalties as they feel appropriate for:

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

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Your contact

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