

# Helsing's 2026 "The Truth is in the Field" Challenge



Helsing is a European defence technology company building AI-enabled systems for real-world deployment. In three facets our challenge explores areas of engineering that are critical to both Formula Student and our own work when building physical products for the real world: software deployment, autonomous performance, and safety systems.

## Facet 3: Autonomous Safety Systems

Building an autonomous vehicle that drives fast is one thing - ensuring it does so safely and handles failures gracefully is another. For this challenge, we want to understand how you approach safety in practice.

Your submission should be structured in two parts:

**Part 1:** Begin with a concise overview of your safety architecture. What safety systems protect your vehicle, how do they interact with your autonomous stack, and what does a typical failure response look like? Then address the following three core questions:

- Which kinds of failures can your system detect, and how? What happens when each type is detected?
- Beyond emergency braking, what other protective responses does your system have? Can it operate in degraded modes, and how do you decide between recovery, safe mode, or emergency stop?
- How do you validate your safety systems? Which scenarios do you test, and how do you prioritise the tests?

**Part 2:** Select one additional area from the following list to explore in depth:

- Describe a specific incident where a safety system (should have) activated during testing or competition. What happened, how did the system respond, and what did you learn and change afterward? If you haven't had such an incident, describe your closest call and what prevented it from becoming a real problem.
- How do you build confidence in your safety systems incrementally? What's your process from initial testing to full-speed autonomous runs? What are your go/no-go criteria at each stage, and how do you decide when the system is "safe enough" to progress to the next level of risk?
- How do you balance safety margins against performance? When does your system decide to slow down, abort, or continue at risk? How conservative are your thresholds? What (e.g., emergency braking trigger distances, maximum speeds in degraded modes), and how have they evolved through testing?

We recognise that teams are at different stages of development. We value thoughtful safety engineering and honest assessment. Focus on your technical reasoning, risk decisions, and lessons from testing.

## Submission

Your submission must be a PDF file in DIN A4 format, consisting of at most three pages of text and at most three pages of supplementary material (figures, tables, pictures, etc.). The language of the report shall be English and the report uploaded to the FSG online portal **by 2026-05-31 23:59 CET**. Submissions will be treated confidentially and will not be shared outside of Helsing's jury.

## Award details

All teams registered for FSG 2026 are invited to participate. Participation is free. The teams placing first, second, and third are awarded prizes of 3000 €, 2000 €, and 1000 €, respectively.

In the first stage (2026-03-09 to 2026-05-31), teams submit written reports for three facets:

- Software Deployment and Integration (released 2026-03-09, submission deadline 2026-04-05)
- Beat the Human (released 2026-04-06, submission deadline 2026-05-03)
- Autonomous Safety Systems (released 2026-05-04, submission deadline 2026-05-31)

Each submission is scored from 0 to 100 points, unsubmitted facets score 0 points. A team's final score is the sum of their two best submissions.

In the second stage, the six teams with the highest final scores are invited to discuss their submissions with Helsing engineers during the Hockenheim event. The jury will select the best three teams and award the prizes at the awards ceremony. All decisions are final and not subject to legal recourse.

## Contact

For questions about this challenge, contact [formulastudent-help@helsing.ai](mailto:formulastudent-help@helsing.ai).