

Report on the activity in the framework of the European Inventor Network



To be sent to:

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Name of the alumnus who implemented the activity

Karlheinz Brandenburg

Short description of the activity

On February 26, 2026, a STEM project day was held at the Technische Universität Ilmenau for 12 students from grades 11 and 12 of Albert Schweitzer Gymnasium Erfurt. The students attend specialized STEM classes, and their school is a member of the MINT-EC network of excellence schools.

The objective of the activity was to provide students with direct exposure to innovation processes and STEM career paths through personal interaction with a renowned inventor. Under the patronage of Prof. Karlheinz Brandenburg, Senior Professor at TU Ilmenau and co-inventor of the MP3 format, students gained insights into the development of groundbreaking audio technologies and learned about his long-standing research career in audio coding.

The program included an introductory talk by Prof. Brandenburg, where he shared insight into his work on audio coding and his longstanding research career at TU Ilmenau, explaining how curiosity, persistence, and interdisciplinary thinking are essential for innovation.

Following the inspiring talk, the students experienced an impressive demonstration of Deep Dive Audio, an advanced audio technology, developed by Prof. Brandenburg and his team at Brandenburg Labs. The technology reproduces virtual sound sources through headphones so realistically that they are almost indistinguishable from real sound sources.

The group also took guided tours through several research facilities at TU Ilmenau, including the listening lab, the audio and video lab, as well as the new audio lab.

In the final part of the project day, students took part in a hands-on workshop where they assembled and played their own sensor-based theremin. Working in small groups alongside engineers from Brandenburg Labs, they learned the fundamentals of electronics, sound generation, and interaction design, and were able to take their assembled instruments home.

Date and place of the activity

February 26, 2026, at the Technische Universität Ilmenau (TU Ilmenau), Germany

Audience (number and age of the participants)

12 outstanding students from grades 11 and 12 of Albert Schweitzer Gymnasium Erfurt. The students were accompanied by a teacher.

Outcomes and achievement

- The students were able to meet a successful inventor who pioneered and breakthrough the modern music industry and learn from his experiences.
- 12 upper-secondary students gained first-hand exposure to scientific research, innovation processes, and real-world technology applications through direct interaction with an inventor, researchers, and university laboratories.
- Participants successfully completed a hands-on electronics workshop by assembling and playing a sensor-based theremin, strengthening their understanding of basic electronics, sound generation, and interaction design.
- The event provided students with concrete insights into academic and professional pathways in STEM disciplines.
- The project day demonstrated successful cooperation between secondary education, higher education, industry, and innovation networks, supporting the objectives of the European Inventor Network.
- The students were able to listen to the first truly immersive audio demo that has been presented to an international audience at several global conventions/ conferences and received wide recognition.

Recommendations

The project day format has proven very inspiring and is recommended for continuation and expansion. Involving additional schools and students, particularly those with a STEM focus, would further broaden its educational impact and outreach.

Attachments: Any supporting documents (such as photographs, testimonials or other relevant materials) that help illustrate the activity's impacts and effectiveness should be sent to mchopin@epo.org. These supporting documents might be posted on the European Inventor Network webpage.







