

- MS. SCHLAU:** A beautiful good morning to you, Professor. Good morning, dear students. Professor? Professor! What happened?
- PROFESSOR EINSTEIN:** This morning I was walking in this wonderful rain... I was happy, was singing...
- MS. SCHLAU:** How wonderful... !
- PROFESSOR EINSTEIN:** Yes, but I forgot that rain is bad for JOWO. He hasn't made a sound since we arrived.
- MS. SCHLAU:** But Professor perhaps he just needs a little time to recover. JOWO? JOWO, do you have a "drone cold"?
- PROFESSOR EINSTEIN:** He's talking again, Ms. Schlau, he's talking again. JOWO, please, please get better again! You'll also get some really yummy software. OK? Aha! He's alive! He's alive. I'm guessing that perhaps the chip to the autopilot was damaged. It's located at the top of his head, where he isn't completely tight...uh, I mean waterproof.
- MS. SCHLAU:** Autopilot? He has an autopilot?
- PROFESSOR EINSTEIN:** Of course. This is an idea I came up with a while ago while I was watching a movie made by Christoph's team of field researchers.
- MS. SCHLAU:** Really? Could we see that as well?
- PROFESSOR EINSTEIN:** If JOWO is able and the students are interested, of course. Well, wonderful. JOWO, show us the movie "Autopilot". But only if it doesn't strain you too much.
- These are the researchers from Braunschweig University. They're going to show us a very special car. You will **see (SEHEN)**, Ms. Schlau. Here in the **car (AUTO)** is my colleague Dr. Lichte. He's entering into the computer where he wants to drive. That information is saved in this special navigation instrument. Now we're ready to go.
- MS. SCHLAU:** But Professor, a car with a navigation device - that isn't anything special. You also don't need such a strange thing on the roof for a GPS.
- PROFESSOR EINSTEIN:** Right. But watch what's happening now. Mr. Lichte lets go of the steering wheel. And suddenly you hear the sound of the turn signal. The blinker begins flashing. And as you can see - the blinker is flashing. The car drives into the turn lane and the steering wheel turns. The car curves to the left without Mr. Lichte needing to do anything at all. His **feet (FUSS)** aren't touching the gas pedal either and still the car moves forward.

- MS. SCHLAU:** So the car not only knows where it's supposed to go but it can also go there on its own?
- PROFESSOR EINSTEIN:** Exactly! And it went here: To the destination that had been entered - a testing area. Here, Johannes and Dr. Lichte are trying something. Johannes is standing in the road and the car is about 500 meters away from him. Mr. Lichte pushes a button and the test begins. The car accelerates, goes faster without Mr. Lichte pushing on the gas pedal.
- MS. SCHLAU:** It's speeding up even more - heading directly for Johannes! Professor, Professor, I can't watch. That is... that's dangerous.
- PROFESSOR EINSTEIN:** ...and fortunately brakes in the nick of time.
- MS. SCHLAU:** That's completely crazy. Johannes just walks into the road when a car is coming.
- PROFESSOR EINSTEIN:** Hm! Of course he wasn't really standing there. That was just a photo stand. But more importantly - the car braked all by itself. The next test makes it even more difficult for the automobile. This time, they are hiding between two cars along the side of the road. Johannes is about to throw a ball into the **street (STRASSE)** right in front of the car. Now!
- MS. SCHLAU:** And once again the car brakes on its own. But how does the car do that?
- PROFESSOR EINSTEIN:** That has to do with the turning thing on the roof. That is a laser scanner. The laser scanner sends out laser signals. Unfortunately, they're invisible, but with a little trick, you can see them. And that's why Johannes is driving into the hangar. They took the ball with them, of course. They take it out and put it in front of the car. Now, here's the trick: They have constructed a special camera which can capture the laser beams in the dark. We just need someone to turn out the light and...
- MS. SCHLAU:** It's true - you can see something on the screen.
- PROFESSOR EINSTEIN:** That's what laser beams look like, Ms. Schlau. No worries - these beams are far too weak to be dangerous for your eyes. Here on the left is the laser scanner and on the right is the ball.
- MS. SCHLAU:** But what exactly the laser beams do is something we can't see.

- PROFESSOR EINSTEIN:** That's why Johannes decided to dress up as a laser beam. Now he just needs to get himself into shape -after all, laser beams are quite **fast (SCHNELL)** - and then he can get started. The laser scanner sends out a laser beam. If the beam doesn't hit anything, it disappears into the distance. The scanner keeps turning and sends out another beam, and so on and so forth...
- MS. SCHLAU:** I understand. But whenever a laser beam hits something - for example, a **ball (BALL)** on the street, then the laser beam ricochets back and hits the scanner.
- PROFESSOR EINSTEIN:** Exactly. In reality, this all happens very fast and the scanner also captures things that aren't on the street but rather on the side of it like this car here. That's how the laser scanner recognizes the items around the car. The scanner transmits this information to a **computer (COMPUTER)** in the trunk. And this computer determines whether the car should turn, **brake (BREMSEN)**, or **drive (FAHREN)** forward. In this case, it's quite clear - there's a ball on the street - so the car needs to brake. By the way, this is how the computer shows this on its clever navigation instrument. Here you can see the car that's driving. On the left is the picture of how things really look and there goes the ball and that's why the computer says: Brake. On the right side of the image you can see two orange stripes. On the left is the ball and on the right is the car that's parked along the side. And this is also how the car operates in traffic.
- MS. SCHLAU:** Ah, I see: Using the navigation instrument, it's clear where the car should drive and the laser scanner scans the surroundings of the car. When there's a car in front of it, and brakes the computer in the car also brakes.
- PROFESSOR EINSTEIN:** I was thinking about it: In the future, if cars can drive on their own, their drivers could possibly spend their time shaving!
- MS. SCHLAU:** Or eating breakfast.
- PROFESSOR EINSTEIN:** Hahahah...
- MS. SCHLAU:** Or looking outside the window.
- PROFESSOR EINSTEIN:** Or brushing their teeth. But whatever they end up doing, one thing they shouldn't forget: even if a car is self-driving, someone still needs to **pump the gas (TANKEN)**.

MS. SCHLAU: That was extremely interesting, Professor.

PROFESSOR EINSTEIN: Wasn't it? And for a genius like myself,
it's also become clear how we can repair JOWO.

MS. SCHLAU: Oh really?

PROFESSOR EINSTEIN: Oh yes, I'm going to give him some of the best medicine in the world - a
very special software. Alright, the memory stick with the software is in.
JOWO, are you ready? Music and dance will energize you. Even drones,
JOWO. Come on, Ms. Schlau, shake those hips.

MS. SCHLAU: I uh... I don't know if...Haha... Oh well... oh, OK.