

## Experiments Next Generation Infrastructure

AIT is also present at TRA 2018 with its Center for Mobility Systems. In the area of mobility and traffic, the Center primarily deals with measuring and analysing vibrations, with monitoring and establishing safety assessments of structures, and with traffic noise reduction.

### **VIBES**

The VIBES research project measures oscillations and vibrations, using these data to draw conclusions on their impact on human beings, buildings and the environment. Measures and activities for vibration protection and the optimization of construction units may be deduced from this. Vibrations may stem from quite different sources, impacting residents, buildings, and infrastructure facilities in the vicinity. For measuring vibrations, a wide range of methods are being used. The vibration exciter MoSeS or the Long Stroke Shaker are being used to determine ground conditions on site. The laser vibrometer enables measuring wind-induced oscillations in buildings over larger distances without having to apply direct sensors. From the large number of measurements, results are gleaned which in turn allow for setting up targeted measures for vibration protection.

### **ASSESS**

Within the scope of the ASSESS project, AIT is monitoring buildings with regard to their respective safety. This comprises assessing their resilience against diverse influences as well as dynamic loads, determining the risk in case of natural catastrophes, and developing preventive measures for the future. Traffic infrastructure elements such as bridges are continually monitored. For this, specifically developed sensors and evaluation routines are available which continually collect and store data, transmitting them together with warning alerts if benchmark values are exceeded.

For determining the cause of a damage, numerical models are in place which allow for identifying damage scenarios in combination with changes in measured values. The AIT researchers aim at ensuring a safe, resilient transport network and at predicting both the extent of the service life of constructions and of the risks they face.