



AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

The AIT Austrian Institute of Technology is Austria's largest research and technology organisation. With its seven Centers, the AIT regards itself as a highly specialised research and development partner for industry, and its researchers are tackling the key infrastructural challenges of the future: Energy, Health & Bioresources, Digital Safety & Security, Vision, Automation & Control, Transport Technologies, Technology Experience and Innovation Systems & Policy.

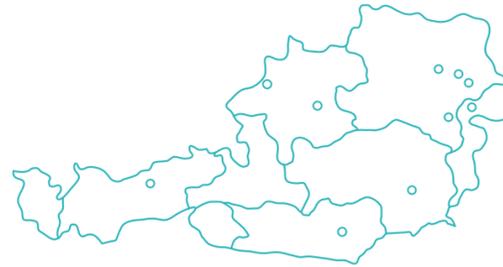
CENTER FOR TRANSPORT TECHNOLOGIES

Mobility is a core pillar of human society and therefore a central factor in our economic system. At the AIT Center for Transport Technologies, around 200 experts are working on solutions for sustainable, safe, intelligent and thus future-proof mobility. The focus of the research and development work is on material-based lightweight design, on the electrification of the propulsion train and the storage of electrical energy, as well as on a resilient and safe transport infrastructure. This also includes environmentally compatible and intelligent production technologies for mobility components. Comprehensive system know-how, scientific excellence, state-of-the-art laboratory infrastructure and many years of international experience enable AIT experts to drive innovations in the field of climate-friendly mobility and thus to serve industry and society already today with the solutions of tomorrow.

MORE ABOUT ASSESS:



<https://www.ait.ac.at/en/assess>



1.400
EMPLOYEES

10 LOCATIONS

7 CENTERS

**AUSTRIA'S LARGEST
RESEARCH AND TECHNOLOGY
ORGANISATION**



**AIT AUSTRIAN INSTITUTE
OF TECHNOLOGY GMBH**
Center for Transport Technologies
Head: Dr. Christian Chimani
Giefinggasse 4 | 1210 Vienna, Austria
www.ait.ac.at



Mag. Florian Hainz, BA
Marketing and Communications
Center for Transport Technologies
T +43 50550-4518 | M +43 664 88256021
florian.hainz@ait.ac.at



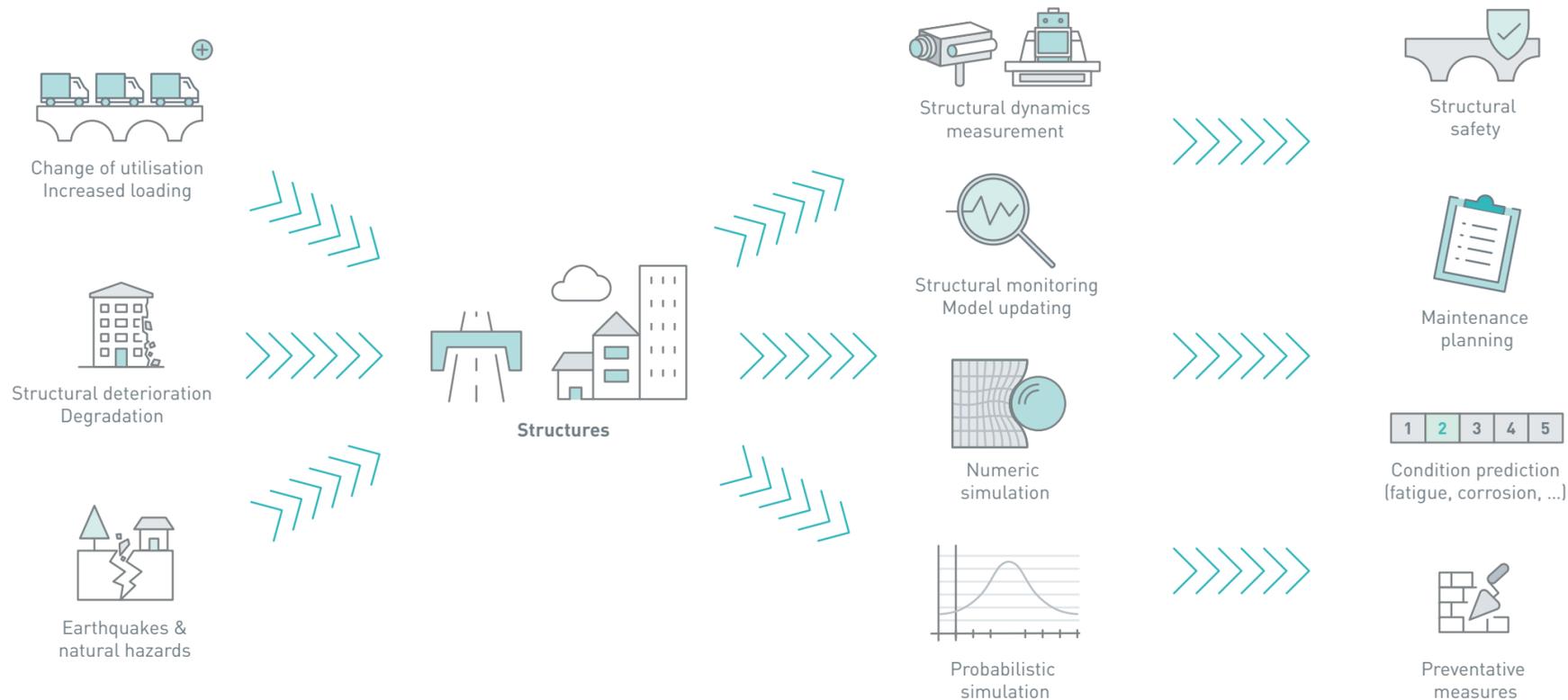
Dr. Alois Vorwagner
Thematic Coordinator
Structural Dynamics & Life Cycle Engineering
Center for Transport Technologies
T +43 50550-6624 | F +43 50550-6439
alois.vorwagner@ait.ac.at



ASSESS
Safety analyses and condition assessments
of structures

ASSESS: MONITORING, SAFETY & RISK ASSESSMENT OF STRUCTURES

With ASSESS, we monitor structures and perform safety analyses for them. We assess their resilience to various influences and dynamic loads, evaluate the risk of natural hazards and develop preventative measures for the future.



STRUCTURAL INTEGRITY OF BUILDINGS AND NATURAL HAZARD RISK

We determine the vibration behaviour of structures, e.g. through targeted excitation with the vibration exciter MoSeS. We then compare the results of these on-site measurements with the vibrations we calculated using simulation models of the structures. The resulting model serves as a basis for damage detection and evaluations of danger zones, rockfalls and earthquakes.

MONITORING AND CONDITION ASSESSMENT: BUILDINGS, BRIDGES AND INFRASTRUCTURE

We analyse the state of buildings and condition changes of essential structures such as bridges via permanent structural health monitoring. Dedicated sensors and evaluation routines continuously record and transmit data as well as warnings for exceeded threshold values. If the cause of the damage is also to be recorded, we use numerical models to identify correlations between damage scenarios and measured value changes.

QUALITATIVE ANALYSES & REPORTS AND ACCURATE FORECASTS AT YOUR DISPOSAL

We provide you with detailed reports containing a range of results from our monitoring and analysis of structure conditions and safety assessments. We identify risks, make predictions and evaluate preventative measures. You can also use our prediction models and monitoring systems for your purposes.

THE SAFETY OF STRUCTURES IS A CRUCIAL FACTOR

Traffic, ageing, natural hazards or vibrations – any of these can cause considerable damage to buildings and infrastructure. Researchers at AIT are addressing this problem with the goal of ensuring a safe, resilient transport network and predicting the service life and risks of structures.



WE PROVIDE SUPPORT FOR YOUR MAINTENANCE PLANNING

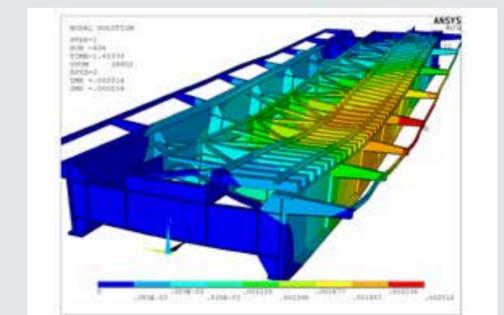
What is the lifespan and serviceability of your buildings? How safe are they? When exactly do you need to take action in order to prevent damage, and what impact could natural hazards have? We provide you with clear and accurate answers to these questions. This gives infrastructure and building operators, the construction industry, state authorities, and engineers the leading edge they need for safety precautions and other future measures.



Bridge monitoring: Permanently-installed sensors allow us to continuously record data and transmit it, automate data evaluation and measurement report creation, and send warnings in case of exceeded limits.

ASSESS, APPLIED

- Prediction of damage such as crack propagation, corrosion and material fatigue
- Analysis of earthquake effects under dynamic time history analysis
- Probabilistic evaluations of limit states
- Dynamic impact simulations with rockfall safety assessment
- Condition monitoring of noise barriers
- Structural health monitoring for essential structures
- Corrosion measurements of reinforced concrete components
- Structural dynamics analysis of components



Numeric simulations in structural dynamics: Using numerical modelling and calculations, we perform realistic simulations to determine the integrity or vibration behaviour of structures. These include, among others, dynamic time history analyses of rockfall events, earthquakes or simulations of subsurface waves in the soil.