Digital Safety & Security

In the context of comprehensive global interconnectedness and digitisation, it is becoming ever more important to protect increasingly critical infrastructures. In the Center for Digital Safety & Security, modern information and communication technologies (ICT) are being developed precisely for this purpose. You can encounter a number of them at TRA 2018.

Secure and reliable cyber-physical systems

Reliability means availability, integrity, serviceability, safety, and security. In Industry 4.0, it is expected that robots will collaborate with human beings in the future, and that self-driving cars take autonomous decisions based on sensor data and on communication with other vehicles and the infrastructure, respectively. Malfunctions or weaknesses in these areas can quickly result in accidents or even loss of human life. In the area of "Dependable Systems Engineering", AIT experts focus on developing methods, tools, and standards for increasing the reliability of software and systems in the different phases of concept, development, certification, and operation. The research group consists of renowned scientists and practitioners, and it deals not only with fundamental research questions, but also maintains close links with industry.

Protection of critical infrastructures and networks

Thanks to AIT's long-standing experience in the area of digital security, Austria has positioned itself internationally as a high-tech location for Cyber Security. Thanks to this know-how, AIT operates as a partner for relevant national authorities and has established itself as a renowned institution on Cyber Security in the European research landscape. The AIT experts are setting their sights on Machine Learning in order to develop ground-breaking technologies and solutions for the future Cyber Security ecosystem. These specific IT security solutions are setting new benchmarks, thus ensuring the competitiveness of national products in the international marketplace.

5G wireless communication

Within the research focus area of "Physical Layer Security", AIT experts are developing wireless communication technologies for next-generation applications for transport and industry. These communication procedures for 5G systems are to make possible ultra-reliable and high-performance connections with the shortest possible reaction times (latencies). Thus, it will become possible in the future to replace up to now cable-connected production environments by wireless systems, and to establish reliable communication among autonomous vehicles.