30th SafeTRANS Industrial Day

in cooperation with BTC Embedded System AG

Virtual Assurance cases for safety-critical, highly autonomous systems

In view of the high complexity of highly automated and autonomous systems, full validation cannot be achieved using traditional field tests. For this reason, various initiatives such as the VDA flagship initiative are striving for an increasing virtualization of system testing. Depending on the type of test, virtualization relates to the virtualization of the system environment, the virtualization of the sensors and/or the perception, the virtualization of the vehicle dynamics models, or the virtualization of the implementation platform of the system. Also, continuous development processes (DevOps) involving over-the-air updates demand safeguarding of on-line deployed components using digital twins of systems already in operation.

For safety-critical systems, domain-specific safety standards specify which artifacts may be used to create a safety case. The workshop addresses the question of how chains of reasoning for safety cases can be constructed in such a way that safety cases can be based to a high degree on the results of virtual validation. It places particular emphasis on the question of whether existing safety standards can be adapted in a way that artifacts obtained from virtual validation can be used to a large extent for the construction of safety cases. In particular, this entails that a virtualization of the target architecture can be achieved by models of the target platform that include all non-functional properties of the target system relevant to the safety of the overall system, e.g. with regard to fault hypotheses, timing characteristics, resource contention, power consumption, degradation behavior, as well as sufficiently accurate models of the sensor and actuator components.

The workshop reports on current results on the construction of safety cases for safety-critical systems using mixed virtual and traditional validation methods and addresses the automotive, aerospace, maritime, rail and production sectors.

The workshop serves as a kick-off for the formation of a new SafeTRANS working group, which addresses the challenges to be solved and the expected time horizons in a roadmap process toward construction of safety cases exploiting virtual assurance cases, that will start will be formed at the end of June 2022.

Please submit the title and abstract (ca. 1 page) for possible contributions by **May 1, 2022** to katja.bonhagen@safetrans-de.org. Due to the expected participation of foreign participants, the conference language will be English.

Information about 30th SafeTRANS Industrial Day, in cooperation with BTC Embedded Systems AG:

Date:	03.06.2022
Location:	EWE Forum Alte Fleiwa, Alte Fleiwa 1, 26121 Oldenburg, Germany
Website:	http://www.safetrans-de.org/en/Veranstaltungen/2022/06/03/30.-safetrans-industrial-day