



**Dr. Tobias Schaller**  
**Federal Office of Transport**  
**Division Safety**

**Head of Section Scientific Bases**

### **Biography**

Dr. Tobias Schaller holds a Master's degree in civil engineering and a doctorate's degree in natural sciences. After a post doctorate research project at the School of Oceanography of the University of Washington in Seattle, he worked several years for an engineering company in Bern. He was leading projects in the area of water protection, natural hazards, transport safety and risk assessment. Since 2005, he is working at the Federal Office of Transport (FOT) in Bern, Switzerland, first as a scientific collaborator responsible for the topics tunnel safety, major accident prevention, dangerous goods advisors, dangerous goods regulations and water protection. In 2012 he became the head of the unit Scientific Bases which is responsible for the topics operational risk management (recording, analysis, evaluation and assessment of safety relevant data, identification implementation and controlling of risk mitigation measures), railway tunnel safety and interoperability.

**Title and summary of presentation: “Refurbishment and monitoring program of level crossings in Switzerland”**

In 1999, the Swiss Federal Office of Transport (FOT) imposed a refurbishment program for level crossings (LC) in Switzerland. At the end of 2014, roughly 1250 LC were eliminated. Of the remaining 4662 LC, approx. 4100 complied with regulations. In 2014 FOT decided to elaborate a monitoring program for LC. Objectives were to identify the effect of the refurbishment and the safety relevant factors for registered accidents as well as to elaborate a monitoring program to supervise the future evolution of LC safety.

First results indicate a slight decrease of the number of incidents at LC since 2007. With respect to pedestrians and cyclists, different patterns can be observed. Between 2009 and 2014 they are involved in roughly 6 % of all registered incidents but nearly 25 % of all accidents (incidents with at least one fatal or severely injured person). Taking into account only tram lines having tracks separated from the road, pedestrians and cyclists are involved in 20 % of all incidents and 50 % of all accidents. LC at these lines are often equipped with flashing light systems, which show, if compared on a netwide basis, a significantly higher risk level than LC equipped with barriers or St. Andrew crosses. Overall, more than 99 % of the incidents are caused by the road user.

*“LC monitoring program, effectiveness of refurbishment and risk mitigation measures.” He said*