Research project SeRoN: Enhanced security of bridges and tunnels throughout Europe

PTV Group presents methodology for identifying critical road transport infrastructure

Karlsruhe, 20.03.2013. Today, the results of the EU research project "Security of Road Transport Networks" (SeRoN) were published by PTV Group. The leading provider of software and consulting services for traffic and transport logistics presents a methodology which allows planners to identify critical bridges and tunnels and to develop appropriate protection measures. SeRoN had a budget of EUR2.25 million funded by the EU. Seven partners were involved in the project under the management of PTV Group.

To make Europe's roads safer for its citizens, the European Union (EU) has placed a major emphasis on Safety as part of the 7th Framework Programme. As part of this programme, the SeRoN project investigated the security of tunnels and bridges. "We have developed an innovative methodology for the analysis and assessment of road networks and infrastructure objects as part of the SeRoN project," says project manager Dr.-Ing. Georg Mayer, PTV Group. "This method provides road network operators and owners with a holistic approach to the identification of critical road infrastructures, thus allowing them to strengthen the security and resilience of their infrastructure."

Security in four steps
To this end, the project partners developed a four-step approach: In a first step, the users identify and classify the tunnels and bridges that are relevant for the risk assessment within the selected study area. In step two, the network importance of the previously filtered infrastructure object is determined by means of a transport model (e.g. PTV Validate). Step three assesses the risk on the basis of a quantitative risk analysis (QRA). The risk assessment is based on specific scenarios (e.g. a truck fire in a tunnel) in order to be able to assess the impacts of an incident on the road user, the infrastructure object and the surrounding transport network. In a final step, the cost-effective protection measures are analysed. "A major advantage of the four-step approach is the modular structure of the methodology, which means it can be implemented step by step," says Ingo Kaundinya, Head of Division, Bundesanstalt für Straßenwesen (BASt / German Federal Highway Research Institute), who supported the project. "Moreover, the methodology was tested thoroughly by our research institute. For the validation, we had access to a wealth of technical data on roads and infrastructure objects throughout Europe." BASt now
wants to introduce this methodology to both road construction authorities and private operators. "We will present the methodology developed by the SeRoN project partners at various conferences and meetings on road safety as a basis for discussion," says Kaundinya. A detailed brochure is available for download at www.seron-project.eu.

2,938 characters. Author’s copy kindly requested!

Images

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Scientific expertise is one of our particular strengths. We run projects in a goal-based and practice-oriented manner. Currently, we have over 600 employees worldwide crafting powerful and innovative solutions. Our head office, which is located in the technology region of Karlsruhe, Germany, has been the centre of development and innovation since the formation of our company in 1979.