Research Areas

- Holistic approach
- Planning recommendation
- Compensation of other safety measures
- Detection
- Simulation
- Dimensioning of ventilation
- Risk analysis
- Cost / benefit / LCC

Consortium Partners

FOGTEC FIRE PROTECTION

BUNG Beratende Ingenieure

STUVA

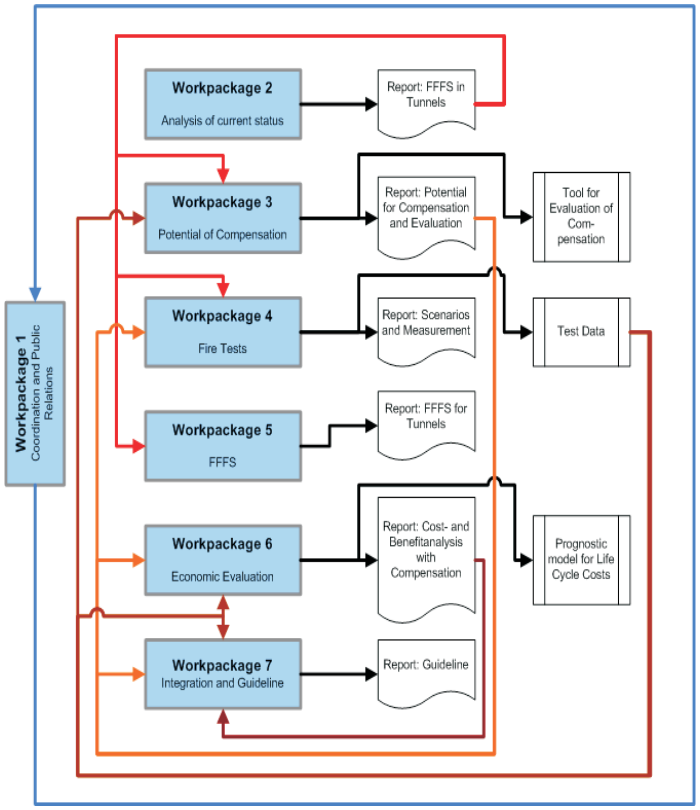
TÜV SÜD Rail — Choose certainty. Add value.

RUB — Ruhr-University Bochum Institute for Tunnelling and Construction Management — TLB

External Partners

INSTITUTE of the FIRE DEPARTMENT Saxony-Anhalt

Project Structure



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SOLIT²

Safety of Life in Tunnels II

Founded by

Federal Ministry of Economics and Technology

Status: Spring 2010

Background & Objectives

The fires happened in the past showed that under severe conditions there may be injuries or even casualties in tunnels. In almost all cases, however, fires caused considerable damage to the structure. In addition to direct repair costs of the tunnel, the necessary blocking of the tunnel causes further more high economic costs.

To date, safety installations in road tunnels are mostly regulative regulated. In Germany, for example, the RABT 2006 (Guidelines for the equipment and operation of road tunnels) sets the minimum requirements for lighting, fire detection, ventilation or emergency exit routes intervals with defined values. However, there are already calls for greater risk-based planning of the safety installations.

In a report of the PIARC (World Road Association) on fixed fire fighting systems, the necessity of risk analysis is specifically identified for this type of fire fighting equipment in the wake of the decision making process. Currently, there are no general standards worldwide (except for Japan) for the dimensioning of such systems.

For the design of systems, the PIARC is proposing to develop a function-based approach, which should take into account all relevant parameters of such installations.

The fixed fire-fighting systems (FFFS), including the water mist fire fighting systems (WM-FFS), must interact optimally in an integrated approach together with other safety installations of a tunnel. An evaluation is only possible taking into account all components.

Procedure

The SOLIT²-project builds on the successful previous project SOLIT. Based on the data gained there, the knowledge on the interaction of water mist fire fighting equipment and other safety equipment will be substantially increased. In the framework of this project, innovative planning approaches for safety installations in tunnels will be developed. Main objectives of the project are:

- efficient integration of water mist fire fighting systems into existing operational concepts
- the assessment of possible compensation of conventio nal equipment by water mist fire fighting systems

Practically, this means that investing in water mist fire fighting systems may possibly allow for a higher safety level and savings in conventional equipment at the same time. In the overall balance over the life cycle, costs can thus be reduced.

For the implementation of the objectives basics of safe and reliable system functions must be considered in detail and life cycle costs of safety systems must be quantified. The project is divided into a total of 7 work packages. In addition to the overall coordination and public relations, work packages address the following areas:

- Status analysis
- Compensation potential
- Fire tests
- Fire fighting system
- Economic evaluation
- Integration and planning guide