



## Inspection Monitoring and Management of Federal Road Bridges

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## Summary

A preservation of the Federal trunk roads is a task to the long-term for safeguarding of the mobility for economy and society. For the maintenance of bridges and other engineering structures this means the guarantee of quality, durability, availability as well as the presently available high standard of traffic safety. This is particularly valid against the background of the forecast traffic increases, the increase of heavy and special transports subject to authorisation as well as possible rises of the permitted total weight and/or the introduction of innovative vehicle concepts. For these scenarios the age distribution of the bridge stock as well as the partly not satisfactory condition state of the structures also are of a special significance particularly. For reaching of these aims instruments and methods which enable all persons concerned are being developed to plan steer and check the complex maintenance processes. The conception of the modules of the Bridge Management System (BMS) was carried out under leadership of the Federal Highway Research Institute (BAST) in the interaction with the Federal Ministry of Transport Building and Urban Affairs (BMVBS) and the local road authorities. The paper describes the modules of the BMS as well as the necessary data of the bridge stock, whereas the assessment of the condition of the structures is of a special significance.

**Keywords:** Bridge Inspection, Bridge Monitoring, Bridge Management

## 1. Introduction

The Federal road network carries the main load of the transit traffic conditionally by its central position in Europe and also will have to take traffic increasing loads in future due to the further development of the European market. Current forecasts start out from another rise of the heavy goods traffic by over 60% up to the year 2015. Already low disturbances in the net by traffic restrictions or by the failure of single structures lead to strong obstructions of traffic with considerable economic subsequent costs as well as to negative effects on the environment.

With assets of currently approx. 170 bn euros this road net represents considerable fixed assets. About 50 bn euros fall to engineering structures like bridges, tunnels, retaining walls etc. The maintenance of this traffic infrastructure is a task to the long-term safeguarding of the mobility of economy and society. A sustainable high efficient development has to be aimed under consideration of all social and economic boundary conditions.

For the preservation of the bridges and engineering structures in the course of the trunk roads this means the guarantee of quality, durability, availability as well as the presently available high