



An information value guide for infrastructure design and operation executives – fundamental idea & concept

Helder Sousa

HS Consulting, Portugal

BRISA Group, Portugal

Helmut Wenzel

VCE Holding GmbH, Austria

Sebastian Thöns

Technical University of Denmark, Denmark

Contacting author: mail@hfmsousa.com

Abstract

Structural Health Monitoring (SHM) has been a subject of major international research in Civil Engineering structures mainly during the last 20 years. While in the beginning, SHM mainly focused on sensor developments, nowadays practical implications regarding the acquisition, collecting and processing of data are being addressed. Indeed, SHM systems have been evolving along the two last decades and have been steadily implemented as a complement to visual inspections.

Nevertheless, the decision to invest on a SHM system should be set on evidence that a payback is given to the owners/authorities and/or to society in terms of reduced maintenance costs and/or increased structural safety. A novel utilization of applied decision analysis on how to assess the value of SHM is being addressed in the COST Action TU1402 – Quantifying the Value of SHM.

In this context, a guide for infrastructure design and operation executives is presented with the main objective of supporting owners and concessionaires in the (re)negotiation of the contract terms related to asset management of Civil Engineering structures along the concession period, when evidence is given on the benefit of the utilization of SHM systems. This guide for infrastructure design and operation executives is a high-level document, concise and objective, built on a bottom-up approach and supported on the case studies and guidelines of the COST Action TU1402.

Keywords: Asset management, Civil Engineering structures, Structural Health Monitoring (SHM), Decision/making, Codes & regulation.