



BMS and BIM: the Portuguese scenario

Carlos Santos, Mário Coelho, José Campos e Matos

University of Minho, Guimarães, Portugal

Sérgio Costa, Vítor Brito

Betar Consultores, Lisboa, Portugal

Contact: mcoelho@civil.uminho.pt

Abstract

Considering the preparation of Europe's near future, two major concepts are mandatory: digitalization and climate change adaptation. In the particular context of bridge management, any future development should also take these two concepts into account. Hence, the existing Bridge Management Systems (BMS) should be upgraded to allow considering the effects of ongoing climate changes, on one hand, and the digital transition expected for the next years, on the other hand. The latter aspect is discussed in the present paper.

The first step to prepare BMS digital transition consists of the screening of its current status and definition of requirements. Regarding the digitalization methodology, Building Information Modelling (BIM) is the way to go. Several efforts are undergoing worldwide to foster the process of BMS digitalization.

The present paper aims at contributing to the BMS and BIM integration by presenting the Portuguese current status. Existing trends, but also gaps, are highlighted. In addition, ideas for a faster and yet sustainable transition are provided.

Keywords: Digital transition, Bridge Management System (BMS), Building Information Modelling (BIM), Portugal

1 Introduction

Large civil infrastructure systems (bridges, dams, hospitals, schools, roads, among others) are recurrent topics of political and technical discussions. The political issue is raised due to the massive investments that such infrastructures require throughout their entire lifecycle. This leads to constant efforts by government and public companies to adjust their budget, as well as establish new taxes, to face infrastructure's needs. On the other hand, technical aspects are derived from engineering and should lead the

implementation of technology and innovation to assure infrastructures perform as expected to fulfil the functionality they are expected to. In both situations, political and engineer decision-makers should join efforts and be aware of environmental and social aspects which are, along with the economy, the three pillars of sustainability.

This work inserts in the Portuguese context and is focused on the current challenge related to the management of the existing bridges stock that requires engineering breakthroughs. To face this challenge, several bridge management systems (BMS) have been developed since the late XX