



Implementation of COST Action TU1406 Quality Control framework as a part of Bridge Management System in Saint Lucia

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Abstract

The main objective of the proposed paper is to present the applicability of the Quality Control framework developed by COST Action TU1406. Since most of the European countries have already implemented a bridge management system (BMS) and by using case studies it has been presented how novel approach can lead to more accurate decisions and connect the evaluation of existing structures to designed limit states. Opposite to European countries Saint Lucia bridge network has for many years suffered from lack of adequate maintenance, which has resulted in pronounced deterioration of the network. The situation has grown worse due to underfunded maintenance and it is therefore of utmost importance that those available funds are put to optimum use.

As a part of BMS development of Saint Lucia, an assessment method of TU1406 proposed quality control plan was used together with American Association of State Highway and Transportation Officials (AASHTO) condition rating method to make the decision-making more efficient. The BMS is developed without any initial information and for inexperienced staff, so it is fruitful to test the novel theoretical procedure in practice and compare results with widely used method.

During the investigation, on-site inspections of 71 bridges were carried out and both methods were compared regarding to implementation procedures and decision-making.

Main attention in this paper is on assessment of structures, including reported information of inspections, and comparison of maintenance decision-making based on different approaches.

Keywords: bridge management, visual assessment, quality control, decision-making, bridges

1. Introduction

Saint Lucia, part of the Lesser Antilles, is an island country in the Caribbean Sea. The geography of Saint Lucia is volcanic and mountainous. The government system is a parliamentary democracy and a Commonwealth realm. The chief of state is

the queen of the United Kingdom, and the head of government is the prime minister. Saint Lucia has a mixed economic system in which there is a variety of private freedom, combined with centralized economic planning and government regulation. Saint Lucia is a member of the Caribbean Community (CARICOM) and the Organization of Eastern Caribbean States (OECS). The size of the