



Cross-asset risk assessment (X-ARA)

Roland Spielhofer

AIT Austrian Institute of Technology GmbH, Vienna, Austria

Nevena Vajdic, Jelena Cirilovic, Goran Mladenovic

University of Belgrade, Belgrade, Serbia

Contact: roland.spielhofer@ait.ac.at

Abstract

This paper presents an outline of the CEDR Transnational Road Research Programme funded research project “X-ARA – cross asset risk assessment”. Objective and scope of the project are described and the approach is outlined. The main part of this paper presents the findings of a desk study, carried out during the project, on literature related to risk assessment in asset management and the current practice on risk assessment of several European road operators.

Keywords: Asset management, cross asset management, risk assessment, road infrastructure.

1 Introduction

This paper presents an outline of the research project “X-ARA – Cross-Asset-Risk-Assessment” which is funded in the CEDR Transnational Road Research Programme Call 2013 “Ageing Infrastructure Management”. It describes the objectives of the project, the approach and gives a summary of the initial desk study that has been conducted to identify the current status of risk assessment in the field of road asset management, both in literature and in current practice at road operators.

2 Objectives and scope

The main objective of the project X-ARA is the development of a comprehensive risk assessment framework including a set of guidelines and a practical software tool (X-ARA risk tool) for the network level assessment of asset risks and impacts. X-ARA considers different asset categories and the cross-asset risk on network level. A working tool fit for use by National Road

Administrations around Europe will be delivered. The output of the tool will be a visual representation (map) showing “heat maps” (i.e. a colouring scheme) of the network (as shown as example in Figure 1) that visually represents the overall maintenance risk for each section and therefore allows a visual comparison of sections.

By applying “what-if” scenarios, the impact of high-level influencing factors will be calculated and can then be compared to the baseline scenario. This will be visualized by changing of the colours.

3 Approach

The project started with an initial desk study that put together the current status of risk assessment in the field of road asset management. A literature review using various sources (PIARC library, Reports of the FHWA, Reports from EraNet Road/CEDR projects, IEEE/IEL Electronic Library, Thomson Reuters Web of Science, ScienceDirect and Documents from governmental and other