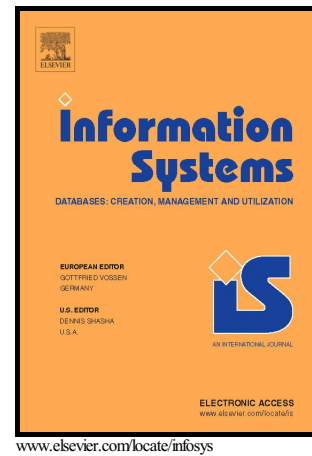


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# A Framework for Visually Monitoring Business Process Compliance<sup>☆</sup>

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## Abstract

Any enterprise must ensure that its business processes comply with imposed compliance rules. The latter stem, for example, from corporate guidelines, legal regulations, and best practices. In general, a compliance rule may constrain multiple perspectives of a business process, including behavior (i.e. control flow), data, time, resources, and interactions with business partners. As a particular challenge, compliance cannot be completely ensured at design time, but needs to be continuously monitored during process enactment as well, i.e., it has to be dynamically checked whether compliance rules are satisfied or temporarily/permanently violated. This paper presents a comprehensive framework for visually monitoring business process compliance. As opposed to existing approaches, the framework supports the visual monitoring of all relevant process perspectives based on the *extended Compliance Rule Graph* (eCRG) language. Furthermore, it not only allows for the detection of violations, but additionally highlights their causes. Finally, the framework assists users in both monitoring business process compliance and ensuring the compliant continuation of running business processes. Overall, the framework provides a fundamental contribution towards the real-time monitoring of compliance in process-driven enterprises.

*Keywords:* business process compliance, compliance rule modeling, compliance monitoring, visual business analytics

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## 1. Introduction

During the last two decades, a multitude of approaches addressing correctness issues of business process models were proposed [1, 2]. While early works focused on the verification of

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