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Hybrid business process modeling for the optimization of outcome data (Summary) ⋆

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Summary of the Contribution

Declarative business processes are commonly used to describe permitted and prohibited actions in a BP. However, most current proposals of declarative languages fail in three aspects: (1) they tend to be oriented only towards the execution order of the activities; (2) the optimization is oriented only towards the minimization of the execution time or the resources used in the business process; and (3) there is an absence of capacity of execution of declarative models in commercial Business Process Management Systems.

Therefore, this contribution aims at taking into account these three aspects, by means of: (1) the formalization of a hybrid model oriented towards obtaining the outcome data optimization by combining a data-oriented declarative specification and a control-flow-oriented imperative specification; and (2) the automatic creation from this hybrid model to an imperative model that is executable in a standard Business Process Management System.

An approach, based on the definition of a hybrid business process, which uses a constraint programming paradigm, is presented. This approach enables the optimized outcome data to be obtained at runtime for the various instances. In order to work out our approach, a language capable of defining a hybrid model is provided, and applied to a case study. Likewise, the automatic creation of an executable constraint satisfaction problem is addressed, whose resolution allows us to attain the optimized outcome data. A brief computational study is also shown.

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