RALph: A Graphical Notation for Resource Assignments in Business Processes (Abstract)[*]

Cristina Cabanillas[1], David Knuplesch[2], Manuel Resinas[3],
Manfred Reichert[2], Jan Mendling[1], and Antonio Ruiz-Cortés[3]

[1]Vienna University of Economics and Business, Austria
{cristina.cabanillas,jan.mendling}@wu.ac.at
[2]Ulm University, Germany {david.knuplesch,manfred.reichert}@uni-ulm.de
[3]University of Seville, Spain {resinas,aruiz}@us.es

Summary of the Contribution

The organisational perspective of business processes deals with the management of human resources throughout the process lifecycle. This involves the definition of assignments at design time, i.e. by querying those actors that are allowed to work on tasks; the allocation of resources at runtime; and the analysis of resource utilisation after execution for process improvement. While it is widely accepted that models and visual notations can be beneficial for system development [1], it is striking to note that a notation for modelling these aspects in an integrated way is still missing. Although a few works have recently contributed towards a better integration of a visual notation for defining resource assignments with extensive semantics [2, 3], they still expose gaps towards a full visual support.

We aim at bridging this gap by introducing RALph, a graphical notation for defining the assignments of human resources to process activities. RALph has the following characteristics: (i) It is expressive. In particular, it allows defining all the resource selection conditions covered by the workflow resource patterns [4] as well as those we discovered in a real scenario from the healthcare domain. (ii) Resource assignments specified with RALph can be automatically analysed. In turn, this enables automatic answers to questions such as "Is the process consistent regarding the use of resources?" or "Which activities may Mr. B perform in the context of process X?". This is achieved by defining the semantics of RALph through a semantic mapping to Resource Assignment Language (RAL) [2], a textual language for resource assignment whose formal semantics is defined in description logics. (iii) It is independent of any business process modelling language. For that, it can be seamlessly integrated with existing notations (e.g., Business Process Model and Notation (BPMN)), as demonstrated with a proof-of-concept prototype that we have developed.

References

1. J. Whittle, J. Hutchinson, and M. Rouncefield, "The State of Practice in Model-Driven Engineering," *IEEE Software*, vol. 31, no. 3, pp. 79–85, 2014.
2. C. Cabanillas, M. Resinas, A. del Río-Ortega, and A. Ruiz-Cortés, "Specification and Automated Design-Time Analysis of the Business Process Human Resource Perspective," *Inf. Syst.*, vol. 52, pp. 55–82, 2015.
3. M. Strembeck and J. Mendling, "Modeling process-related RBAC models with extended UML activity models," *Inf. Softw. Technol.*, vol. 53, pp. 456–483, 2011.
4. N. Russell, W. M. P. van der Aalst, A. H. M. ter Hofstede, and D. Edmond, "Workflow Resource Patterns: Identification, Representation and Tool Support," in *CAiSE*, pp. 216–232, 2005.