# Priority-Based Human Resource Allocation in Business Processes[*]

Cristina Cabanillas[1], José María García[2], Manuel Resinas[3],
David Ruiz[3], Jan Mendling[1], and Antonio Ruiz-Cortés[3]

[1]Vienna University of Economics and Business, Austria
{cristina.cabanillas,jan.mendling}@wu.ac.at
[2] STI Innsbruck, University of Innsbruck, Austria jose.garcia@sti2.at
[3]University of Seville, Spain {resinas,druiz,aruiz}@us.es

## Summary of the Contribution

Business Process Management Systems (BPMS) are increasingly used to support service composition, typically working with executable BP models that involve resources, which include both automatic services and services provided by human resources. The appropriate selection of human resources is critical, as factors such as workload or skills have an impact on work performance. While priorities for automatic services are intensively researched, human resource prioritization has been hardly discussed. In classical workflow management, only resource assignment at BP design time to select potential performers for activities, and resource allocation at run time to choose actual performers, are considered. There is no explicit consideration of prioritizing potential performers to facilitate the selection of actual performers. It is also disregarded in professional solutions.

In this paper, we address this research gap and provide two contributions: (i) we conceptually define prioritized allocation based on preferences; and (ii) we propose a concrete way in which preferences over resources can be defined so that a resource priority ranking can be automatically generated. Our solution builds on the adaptation of a user preference model developed for the discovery and ranking of semantic web services called SOUP [1] to the domain at hand. As a proof of concept, we have extended the resource management tool CRISTAL (http://www.isa.us.es/cristal) with the SOUP component [2], using RAL [3] for resource selection.

1. J. M. García, D. Ruiz, and A. R. Cortés, "A Model of User Preferences for Semantic Services Discovery and Ranking," in *ESWC (2)*, pp. 1–14, Springer, 2010.
2. J. M. García, M. Junghans, D. Ruiz, S. Agarwal, and A. R. Cortés, "Integrating semantic Web services ranking mechanisms using a common preference model," *Knowl.-Based Syst.*, vol. 49, pp. 22–36, 2013.
3. C. Cabanillas, M. Resinas, and A. Ruiz-Cortés, "Defining and Analysing Resource Assignments in Business Processes with RAL," in *ICSOC*, vol. 7084, pp. 477–486, Springer, 2011.