

# Summary of “Automated Resource Assignment in BPMN Models Using RACI Matrices” [1]\*

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## Summary of the Contribution

Organisations need to manage the assignment of responsibilities to their members with respect to the activities that must be carried out in the processes executed within them. Although we usually refer to the human resources<sup>1</sup> in charge of *executing* the work necessary to complete an activity when speaking about assigning and allocating resources to activities, there are other functions (also known as *task duties*) involved in the completion of an activity. For instance, there may be a person *accountable* for the activity, a person that provides *support* for execution when necessary, and one or more persons that are *informed* of milestones related to the activity. There exist specific techniques for the definition of such task duties for an activity, that is, to assign organisational roles to different task duties associated to an activity. A representative example is the so-called RACI matrices [2], which deal with four functions, namely Responsible, Accountable, Consulted, and Informed. A variety of such matrices, called RASCI<sup>2</sup> [3], includes also task duty Support, common in IT organisations.

Most of the current approaches dealing with resource assignment in business processes disregard task duties different than Responsible, which sets a distance with the expressiveness provided by RACI matrices. However, the Business Process Management Systems (BPMSs) increasingly care about supporting the definition and management of such additional functions, e.g. the Generic Human Roles defined in BPEL4People [4], and the different worklists that can be defined in Activiti<sup>3</sup> to assign resources to specific functions associated to the activities.

In this paper, we introduce a novel approach to generate a business process model with complete responsibility information (i.e. a *RACI-aware business process model*) from a *resource-unaware business process model* and a RACI matrix.

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<sup>1</sup> Typically just *resources* for the sake of brevity.

<sup>2</sup> We use RACI and RASCI indistinctly in the rest of the summary.

<sup>3</sup> [www.activiti.org](http://www.activiti.org)

Our approach tackles two main problems. On the one hand, generating process models with all the information required to be able to execute them implies generating very accurate resource assignments for the activities of the process. However, this cannot be done directly due to the high level at which RACI matrices and business process models are built. To overcome this issue, it is necessary to provide extra information for the RACI matrix. In particular, some information about the context in which the process is going to be executed, and some restrictions to be considered, have to be indicated. We call this extra information *binding information*. On the other hand, the control flow of the business process model must be changed according to the functions defined in RACI. To this end, we propose a collection of transformations to represent the information of RASCI matrices together with the binding information, into Business Process Modelling Notation (BPMN) [5] models. The transformations are as generic as possible and can be automated, and the resulting process model has no intrusive information about RASCI at first sight. Indeed, RASCI information is modelled at subprocess level. We have developed an editor of RACI matrices and binding information for process models, and we have implemented a prototype of the transformations described in our approach. They have been integrated in Collection of Resource-centrIc Supporting Tools And Languages (CRISTAL) [7], and can be tried at <http://labs.isa.us.es:8080/cweb/index.html>.

Please, notice that RASCI information could actually be modelled in BPMN in an ad-hoc fashion. Indeed, in [6] we proposed a mechanism to model RACI information in BPMN models based on using the BPMN swimlanes to model the RACI roles. However, this way of proceeding showed several shortcomings, e.g. dissemination of RACI information for a single activity throughout the entire process model, giving rise to unnecessarily large, unreadable output models; impossibility to include binding information; and difficulty to keep consistency and synchronization between the two models involved.

## References

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