

## **A Centralized Matching Scheme to solve the Role-Partner Allocation Problem in Collaborative Networks.**

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### **RESUMEN:**

In the current constantly changing business and economic environment, partners (i.e., individuals and/or enterprises) create Collaborative Networks to join efforts and undertake new projects together, thus allowing them to face business opportunities that would not be possible if attempted by them individually. In this situation, an assignment problem arises, since these projects involve the performance of a group of tasks or processes (named roles) that have to be distributed among the partners. Specifically, this problem, called the Role-Partner Allocation (RPA) problem in Collaborative Networks is a two-sided matching problem with lower and upper quotas on the partner's side, and incomplete and partially ordered preference lists on both sides. A matching problem, and thus also the RPA problem, should be solved by a centralized matching scheme. However, allocations in Collaborative Networks continue to be mainly created by ad hoc arrangements, which takes a long time and is hard work. Looking for a reliable and faster way of distributing roles among partners in a Collaborative Network, the existing centralized matching schemes expected to solve the RPA problem (e.g., DA algorithm, SOSM, CA-QL algorithm, and EADAM) are studied in this paper, concluding that none of them obtain a matching that properly meets the requirement of the RPA problem. Therefore, a new centralized matching scheme to solve the RPA problem is proposed, discussed and exemplified.

### **PALABRAS CLAVE:**

Centralized Matching Scheme, Collaborative Network, Matching Problem, Partner, Role.