The collaboration arc routing problem (CUARP) is a new arc routing problem for the optimization of a collaboration scheme among carriers. This yields to the study of a profitable uncapacitated arc routing problem with multiple depots, where carriers collaborate to improve the profit gained.

We present models where the goal is the maximization of the total profit of the coalition of carriers. While the first model does not consider the individual profit of each carrier, a second model sets a lower bound on the individual profit of each carrier. The models are formulated as integer linear programs and solved through a branch-and-cut algorithm. Theoretical results, concerning the computational complexity, the impact of collaboration on profit and a game theoretical perspective, are presented. Numerical results of computational experiments are presented and analyzed.