



META-TACS: A TRUST MODEL DEMONSTRATION OF ROBUSTNESS THROUGH A GENETIC ALGORITHM

FÉLIX GÓMEZ MÁRMOL^{*}, GREGORIO MARTÍNEZ PÉREZ AND JAVIER G. MARÍN-BLÁZQUEZ

*Departamento de Ingeniería de la Información y las Comunicaciones
Facultad de Informática, Campus de Espinardo, s/n
University of Murcia, 30.071 Murcia, Spain
{felixgm, gregorio, jgmarin}@um.es*

ABSTRACT—Ensuring trust and confidence in virtual communities' transactions is a critical issue nowadays. But even more important can become the use of robust and accurate trust models allowing an entity to decide which other entity to interact with. This paper aims to study the robustness of TACS (Trust Ant Colony System), a previously proposed bio-inspired P2P trust model, when applying a genetic algorithm in order to find the range of values of its working parameters that provides the best TACS performance. The optimization of those parameters has been carried out using the CHC genetic algorithm. Experiments seem to demonstrate that TACS can achieve high performance ratios due to the enhancement provided by META-TACS, and to achieve them for a wide range of working parameters, hence showing a remarkable robustness.

Key Words: Robust Trust Model, CHC Genetic Algorithm, TACS, Trust Ant Colony System, Trust management, P2P Networks, Meta-heuristics