

Interoperability in Multi-Agent Systems: Lessons Learned

Marco Antonio Furlan de Souza¹, Jomi Fred Hübner² *,
Jaime Simão Sichman² **, and Maria Alice Grigas Varella Ferreira¹

¹ Laboratório de Tecnologias de Software
{marco.souza, maria.alice.ferreira}@poli.usp.br

² Laboratório de Técnicas Inteligentes
{jomi.hubner, jaime.sichman}@poli.usp.br
Escola Politécnica da Universidade de São Paulo
Av. Prof Luciano Gualberto, 158, tv.3
05508-900 São Paulo, SP

Abstract. Today there is a substantial number of Multi-Agent Systems (MAS) tools available to the agent developer. Part of them, for reasons of performance and development easiness, were built according to some particular language/protocol, making difficult or hindering the communication of its agents with others developed with different languages and protocols. Despite the increasing effort in the definition of standards for agent communication protocols and languages, the heterogeneity in MAS is a fact that is there to stay. This paper reports experiences of turning an MAS tool, Saci, interoperable. The solution is based on a CORBA bridge that enabled agents written in CORBA-mapped languages to communicate with other native Saci agents, without changing its architecture or programming style.

Keywords. Multi-Agent Systems Interoperability, Multi-Agent Systems Tools and Programming, Multi-Agent Systems Architecture.

1 Introduction

Interoperability is still a great problem in Multi-Agent Systems (MAS) tools. Besides the existence of standardization efforts as practiced by FIPA [3, 4, 5], most of MAS tools available are not interoperable. This lack of interoperability in MAS tools are in part due to design decisions and to the tools employed in their construction. The former implies in an MAS tool with its own specific architecture features like agent registration, advertisement capabilities, white and yellow page services, agent communication language, to mention some, while the last forces the agent designer to use the same implementation language and protocol used in the original tool. Although creating agents in that manner has

* Supported by Universidade Regional de Blumenau and CAPES

** Partially supported by CNPq, grant number 301041/95-4 and by CNPq/NSF PROTEM-CC MAPPEL project, grant number 680033/99-8