

## Preface

The *AMETAS White Paper Series* presents a technical overview on the *Asynchronous MESSage Transfer Agent System* (AMETAS) developed at the department of computer science at the Johann Wolfgang Goethe-Universität in Frankfurt / Main, Germany. Our research group on distributed systems and operating systems began developing AMETAS in 1996. At that time, Java began its crusade through science and industry and paved the way for platform independent programs and code mobility. From the very first lines of code, we developed our own philosophy on mobile agents and shaped the system accordingly. Our main goal was to create a system that is easy to use and can be applied to all application fields without compromising the ideas of agenthood. AMETAS is not specifically tailored to any application domain. Our main interest was to find ways to preserve agent autonomy without putting too much of a burden on agent programmers. Currently, nobody really knows where the mobile agent technology is going. By giving our agents as much autonomy as possible without compromising functionality, we aim at delivering a system that is flexible enough to allow future technical innovations and at the same time can be applied in present major application fields like network management, e-commerce, or mobile computing. Beside autonomy, our main motivation was to build a system that has a simple and easily extendible structure. The simplicity is achieved by introducing clearly defined *core services* for migration, communication, naming and events. Within this core we build a flexible and powerful security system which ensures the applicability of AMETAS in real-world applications. AMETAS is a ready-to-use system which serves educational and scientific as well as commercial purposes.

In this *White Paper Series* the mechanisms and the underlying philosophies are explained without going into great detail. The educationally, scientifically or commercially interested reader should get an idea of how AMETAS works and which advantages the application of AMETAS could bring. If the reader wants a deeper technical insight into the art of writing AMETAS agents, he is advised to read the AMETAS tutorial which is available online and for download at [www.ametas.de](http://www.ametas.de).

Each White Paper of the series presents an insight on a specific part of AMETAS. Theoretical, practical, philosophical, and technical discussions are presented that express the systems foundations and current capabilities. The reader may start with a high-level overview and subsequently go into the individual aspects that meet his interests closing the lecture with papers on the practical issues of writing AMETAS applications. It is not necessary to read all papers. Each of them is self-contained. However, people that are new to AMETAS should read the overview first to get accustomed to the terminology. We also provide a glossary which explains the most important terms. The *AMETAS White Paper Series* is also available in one document which contains an ordered collection of all papers and gives a more complete insight on AMETAS.

*The AMETAS Team*