

# Reaping the benefits: Advanced Knowledge Technologies at work

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Funded by the UK's Engineering and Physical Sciences Research Council (EPSRC) the Advanced Knowledge Technologies Interdisciplinary Research Collaboration (AKT IRC - [www.aktors.org](http://www.aktors.org)) has completed its fifth year of a six year programme of work. This is the third volume of AKT selected papers; the first volume appeared in 2003, followed by a second volume in late 2004. As before, this volume contains only papers that have been already published in workshops, conferences and journals. All material has therefore been subject to stringent and objective peer review processes.

Most of the papers gathered together here appeared in 2005, with some in late 2004 and a handful appearing in early 2006. We have tried to pick a balanced selection from a wealth of eligible AKT papers deposited on our e-print archive ([eprints.aktors.org](http://eprints.aktors.org)). In a number of cases we have also endeavoured to reflect the transformation of preliminary research ideas and initial prototypes - presented in previous volumes - to more robust, application oriented output.

This volume is structured so as to reflect AKT work in the past 12 months or so: this has been focused to a significant extent on *applicable semantic technologies*. In the first 2003 volume, the focus was on the lifecycle of knowledge: knowledge acquisition, modelling, retrieval, reuse, publishing and maintenance. The second 2004 volume focused on the evolution of the AKT agenda to reflect a significant change: the emergence and maturity of the Semantic Web. Hence, we looked at semantic web services, key technologies for deriving machine-readable content from text, such as human language technologies, ontology engineering as a cornerstone for representing shared conceptualisations and knowledge management. The current volume reflects a continuing development and adaptation of our work, one that addresses application challenges.

We grouped the selected papers into the following themes. Firstly, *semantic technologies*, where the emphasis is on the use of semantics to tackle problems such as the annotation bottleneck, coordinating and collaborating in open distributed online environments, generating structured text from large corpora and online information repositories and an experience report of applying technology in government. A second theme was *semantic web applications* - in the areas of research collaboration, technical document enrichment, the semantic Grid, knowledge engineering, search and information seeking, and semantic web portals. The third theme is *semantic web services* - enabling semantic web services in the areas of bioinformatics, natural language processing and business process modelling. A fourth theme relates to *semantic web policies* - issues relating to the application of semantic technology at the scale of the Web. A fifth and final theme relates to *ontology engineering*, where we discuss more traditional knowledge engineering issues alongside emergent topics like ontology alignment and matchmaking in agent communities.