

become a networked force conducting operations in dispersed formations.

To cope the agents in our simulations will need to lift their eyes out of the cockpit and become more environmentally, spatially and socially aware.

One of the requirements we see for *Agentia Sapiens* are an underlying agent oriented infrastructure, such as affordances (Papasimeon 2009), to support our agent reasoning and to interface between the agent and the simulation. We are beginning to understand what this actually entails: Socially aware agents that are allocentric rather than egocentric, embodied, more environmentally and spatially situated. Symbols for reasoning will include spatio-temporal maps as well as just tags.

DSTO's clients are already considering the next cycle of questions and our aim is to ensure that we have the tools in place before they ask.

4. References

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Author Biographies

RUSSELL CONNELL: Russell Connell joined DSTO in 1998 after completing a BSc in Computer Science and Software Engineering at Swinburne University. He led research within Land Operations Division on the use of Intelligent Agents within Land Combat Simulations. He transferred to Air Operations Division in 2005 where he has worked in modelling fighter air combat tactics, and in the simulation of civilians.

SIMON GOSS is Head of Operations Research Capability in the Air Operations Division of DSTO. He has BSc(Hons) 1977 and PhD 1984 from LaTrobe University. He joined DSTO in 1990 as a technical expert to assess the opportunities for artificial intelligence in the Aircraft Systems Division programme; and was awarded a Defence Science Fellowship in 1997 in the Dept of Psychology at the University of Nottingham. He and his team have, over a decade, established intelligent agents as behavioral representations in Operations Research (OR) modeling. He is a Senior Fellow in Information Systems Dept of The University of Melbourne

MICHAEL PAPASIMEON has a BSc (Hons) in theoretical physics and a BE (Hons) in Software Engineering from The University of Melbourne. He has over a decade experience in air combat analysis, simulation and intelligent agents research. He recently submitted a PhD thesis in computer science that developed approaches to modelling the interaction between intelligent agents and the virtual environments in which they are situated.

CLINT HEINZE is a scientist and engineer currently leading an operations analysis team that provides research, studies, assessments and analysis of air combat systems and tactics. His PhD from the University of Melbourne considered techniques for modelling intention recognition in agent systems and has published widely in the space where software engineering meets artificial intelligence. This research was directed toward the construction of large scale military simulations of air combat.