



# Research Directions

Office of Research Services

## ***Decision Support System Interfaces***

**Associate Professor Mark Wiggins, MARCS Auditory Laboratories, and Dr Merilyn Childs, School of Social Sciences, have received funding to investigate a new approach to the design of computer-based decision support systems. This ARC Discovery project aims to explore a systematic approach to identify the most appropriate ways for computer operators to formulate decisions in a range of different environments, including fire-fighting, maintenance engineering and aviation.**



A decision support system (DSS) is a tool that presents information to users in a way that assists the decision-making process. DSS can range from devices as simple as calculating figure-based information such as an odometer for measuring kilometres travelled, to devices as complex as systems designed to prevent traffic collision. The main difference between existing decision support systems is the amount of support that they provide the user as part of the process of making a decision. In the past, DSS have been relatively limited in their scope because each person brings to the decision-making process different experiences and goals – therefore a DSS that works for one person may not work for another.

Professor Wiggins explains that in this project, 'We are undertaking a multidisciplinary, comprehensive analysis of various types of DSS with the aim of developing a system that is capable of adapting to the capabilities and limitations of particular users. Despite different levels of expertise, users will be able, to use specialised software to optimise the way in which information is presented, to ensure both an accurate and an efficient outcome. This is particularly important during situations in which the outcome is uncertain and time is limited, for example, decision making by aviation technicians'.

The research is designed to reshape the development of DSS in the future, by addressing the individual skills and limitations of users. This will mean it will be possible to build a work environment in which competent but inexperienced operators can function accurately and efficiently in advanced technology settings with DSS safeguarding the security of the system in the event of errors. Operators will also be able to use DSS to assist them to build on their knowledge so that, as their skills develop, they will no longer require decision support.

**Project Title:** *Cognitive Features of Decision Support System Interfaces*

Funding has been set at: \$174,000.

June 2006.

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