

## Publications

- Colineau, N. and Paris, C. (2003). La Génération de Documents Multimédia. To appear in *InCognito - Cahiers Romains de Sciences Cognitives*, 1(2), 1-22.
- Lu, S., Paris, C. and Vander Linden, K. (In press). Acquiring task models from different sources. To appear in *Journal of Asian Information Science and Life*.
- Lu, S., Paris, C., Vander Linden, K. and Colineau, N. (2003) Generating UML Diagrams From Task Models; In *Proc. of CHINZ'03*, the 4<sup>th</sup> Annual International Conference of the NZ Chapter of the ACM's SIGCHI, July 3-4, Dunedin, New Zealand.
- Paris, C., Wu, M., Vercoustre, A.M., Wan, S., Wilkins, P. and Wilkinson, R. (2003). An Empirical Study of the Effect of Coherent and Tailored Document Delivery as an Interface to Organizational Websites. In *Proc. of the Adaptive Hypermedia Workshop at UM'2003*, Pittsburgh, USA, June 22.
- Prokopenko, M. and Wang, P. (2003). Evaluating Team Performance at the Edge of Chaos. In *Proc. of the 7th International Symposium on RoboCup*, Padua, Italy, July.
- Wang, P., Valencia, P., Prokopenko, M., Price, D. and Poulton, G. (2003) Self-reconfigurable Sensor Networks in Ageless Aerospace Vehicles. In *Proc. of the 11th International Conference on Advanced Robotics (ICAR-03)*, Coimbra, Portugal, July.

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## Intelligent Interactive Technology Newsletter

June 2003

We have had an exciting beginning of the year with the visits of Professor Gerhard Fischer (Centre for Life Long Learning, University of Colorado) and Professor Keith Vander Linden (Calvin College, Michigan) during their sabbaticals. Keith stayed four months with us, working on the Tiger project.

Christian Mueller-Tomfelde has also recently joined our team, as a post doctorate fellow. As expected, he will work on a project concerned with integrating language instructions and feedback into an immersive environment developed for training purposes, in collaboration with our colleagues in Canberra.

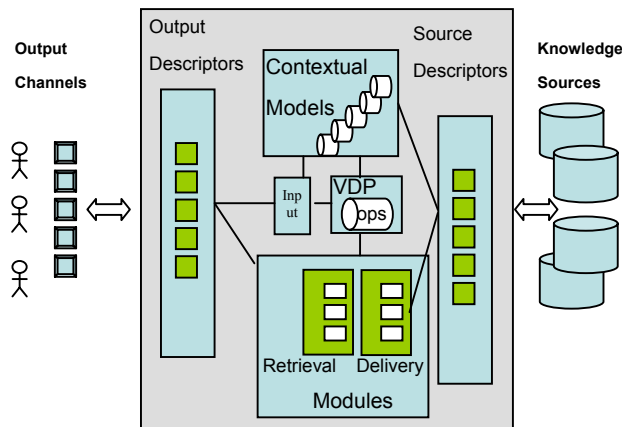


## Delivering Actionable Information

**TIGER:** Topical Information Gathering for Easy Reuse.

Our aim in this project is to support knowledge workers in their (information) tasks. Knowledge workers need access to information to perform their tasks successfully. This corresponds to their *information needs*. In Tiger, we look at satisfying these information needs. We are specifically interested in cases where the information need cannot be satisfied with one single piece of factual data, but rather must be met with a *set* of information data, pulled together into a coherent whole and potentially appropriately synthesised.

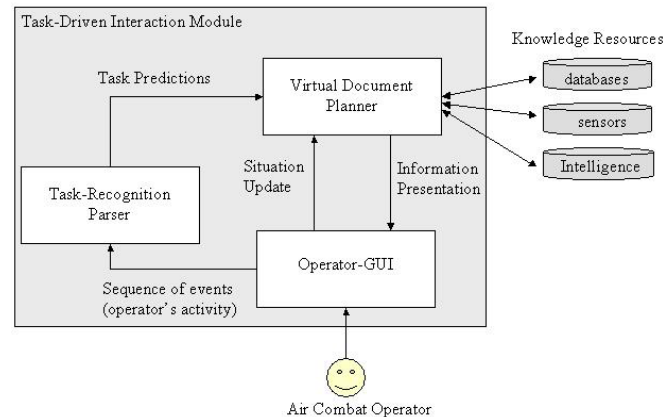
We identified different elements of context that have an impact on information delivery: the task, the consumer of the information, the domain of discourse, the interaction (or dialogue history) and, finally, the device. We have designed a general and flexible architecture for information task. A first prototype of the architecture is implemented.



## Task-Driven Information Delivery

In the context of innovative Airborne Early Warning and Control (AEW&C) platform capabilities, we are building an environment that can support the generation of information tailored to the operator's tasks. To this end, we propose a task-driven interaction environment that delivers tailored multimedia information from the analysis and the recognition of the operator's activity. It is composed of three components jointly developed with other CSIRO research groups:

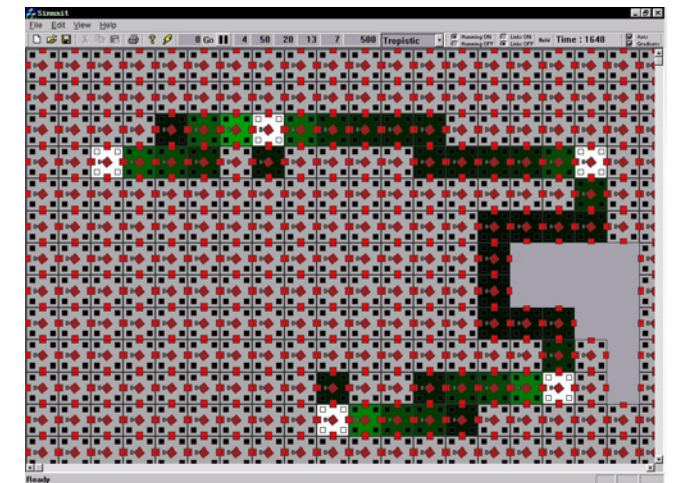
- The Graphical User Interface, which allows the operator to interact with the system;
- The Task Parser, which analyses the operator's activity to both determine the current task in progress and predict the next one; and,
- The Virtual Document Planner, which delivers multimedia information tailored to the operators' tasks.



This work aims to drive information provision based on a representation and recognition of the operator's tasks. The task is then used to determine the operator's information needs.

## Agents and Multi-agent Systems

Our technology is used in the joint **CSIRO-NASA Ageless Aerospace Vehicle (AAV)** project. The aim of the AAV project is to develop and critically examine concepts for integrated smart sensing and communication networks, with the ultimate goal of developing a self-monitoring, self-repairing aerospace vehicle. A multi-agent network contains "cells" that will not only form a physical shell for an aerospace vehicle, but will also have sensors, logic, and communications. Single cells may make fast and automatic responses to sudden damage, while collections of cells may solve more complex tasks, e.g., form a flexible network (a minimum spanning tree) connecting cells that detected impacts.



The obtained **impact networks** can facilitate fast inspections of impact areas, identification of high densities of impacts (e.g., meteor shower), and routing of repair resources.