



Network for Effective Collaboration  
Technologies Through Advanced Research

**Executive Summary**  
**July 2004**

## ***What is NECTAR?***

NECTAR is a new NSERC network of Canada's leading university researchers in human-computer interaction (HCI) and computer-supported cooperative work (CSCW). Our participants come from 6 universities and are world-class experts in these fields. Many have also spun off successful technologies and companies. The [NSERC Research Networks Grants Program](#) has awarded us CDN\$5.5M in research funds to be spent over the period 2004-8. 20% of our funds come from direct industrial contributions. This document summarizes the planned research and the benefits.

## ***Why NECTAR?***

The Internet has long provided a network infrastructure for collaboration technologies (often called groupware) that support how people communicate and work together. The recent availability of broadband Internet connections in offices, schools, and homes has led to a huge increase in commercial groupware systems development. Many more innovative and relevant new technologies are just around the corner: displays that cover tabletops or entire walls, high-precision sensing equipment that tracks movement, and interconnections of dozens or hundreds of mobile computing devices. Even though many of these technologies are already available commercially, or are at the very least advanced research prototypes, there are serious problems when they are used to support real group work. Today's groupware is extremely awkward and inefficient when compared with face-to-face interaction. Collaboration technologies typically fail because they do not support the complex and subtle actions and interactions that make group work simple and natural in the real world.

For this reason, groupware to date has only a few success stories (e.g., organizational memories such as Lotus Notes, instant messaging, multiplayer games). While often quite crude, these technologies succeed because they make collaboration possible where it was previously impossible. Yet if the full potential of current collaborative technology is to be realized, and if we are to capitalize on innovations to come, researchers must find ways to make all computer-supported collaboration more efficient, productive, and natural.

## **Vision**

The vision of this network is to investigate technological and social issues that will make computer-supported collaboration more efficient, more productive, and more natural. Our goals are:

- To reduce collaboration effort and improve collaboration efficiency in computer-supported cooperative work, based on an understanding of how groups of people really work together;
- To maximize the potential of next-generation interactive technologies for collaborative work;
- To make collaboration at a distance as productive and efficient as working face-to-face, where possible;
- To develop computer-assisted collaboration technologies that augment and surpass traditional ways of working together.

## **Expected Results of the Research**

We shall develop innovative techniques and products:

- design-oriented analyses of what people do and need in various organizational settings, new groupware metaphors, tools and techniques to make collaboration more efficient and productive;
- infrastructure (algorithms and architectures) to allow us to rapidly transform ideas into systems, validation and iterative improvement of our innovations by testing whether people can collaborate effectively in realistic situations using the collaboration technologies we develop,
- dissemination of our results and technology transfer to appropriate organizations.

We also anticipate significant benefits in the following areas:

- for the academic sector, significant training opportunities for graduate students, undergraduate students, and post-doctoral fellows;
- for public-sector participants, many of which are distributed across multiple locations, enhanced expertise with collaborative technologies which can enhance their productivity and effectiveness; and, for private-sector participants, the availability of new products to market and to enhance their own productivity and effectiveness.

## **Who is NECTAR?**

### **Researchers and Universities**

The Principal Investigator is Ron Baecker, Bell Professor of Human-Computer Interaction at the University of Toronto. Associate Director is Kellogg S. Booth, Professor of Computer Science, University of British Columbia. Other theme leaders are Saul Greenberg and Carl Gutwin, Professors at the Universities of Calgary and Saskatchewan. The other researchers are:

- Ravin Balakrishnan, Professor of Computer Science, University of Toronto
- Sheelagh Carpendale, Professor of Computer Science, University of Calgary
- Kori Inkpen, Professor of Computer Science
- Gerald Penn, Professor of Computer Science, University of Toronto
- K.N. Plataniotis, Professor of Computer Engineering, University of Toronto
- Elaine Toms, Professor of Management Informatics, Dalhousie University; and
- Roel Vertegaal, Professor of Computer Science, Queen's University.

### **Corporate Sponsors**

The diversity and scope of industrial involvement in and support for NECTAR Research sets a new model for NSERC Research Networks. NECTAR's major corporate sponsors are [Microsoft](#) and [SMART Technologies](#). Other corporate sponsors include [Bell Canada](#), [Avaya](#), [Mitsubishi Electric Research Labs](#), [Caseware](#), [General Motors Canada](#), and [Netera](#).

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