CANARIE

CA*net 4

Advanced Applications Program

Quarterly Progress Report

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Project Information

Lead Contractor:	McGill University			
Project Name:	Shared Spaces		Project #:	AAP-03
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Participant 1:	University of British Columbia			
Participant 2:	BCnet			
Date:	Oct. 13, 2006			
Claim Period:	January 1, 2006	To:	June 30, 2006	

Impact Report

The project continued to have two full time and one half time positions as well as part time staff employed as required. One full time position was vacated at the beginning of the reporting period and the other toward the end. Potential replacement staff were being interviewed.

Project Activities

The Milestone 3 deliverables were completed. However the Project was plagued with technical problems (see Technological Progress below). These problems involved both the Project's transmission software and Canarie's Foundry network switches being used at McGill and UBC. The departure of the Research Associate in charge of programming toward the end of the reporting period delayed work on solving the problems with the transmission software. Canarie staff working with Foundry Networks finally overcame the switch problem at the end of April.

The result of these problems was to seriously delay preliminary work with potential users of the system who were scheduled to begin using it early in the next reporting period. User access to the system was anticipated for September or October. While this would be adequate for basic testing of the system by the end of the project on December 31, it is hoped that the project can be extended by a month or two to enable more extensive testing by a wider range of users.

Deliverables - Milestone 3: June 30, 2006.

1. All project servers installed and tested at McGill and UBC, successful completion of operations test.
   Complete.

2. Transmission of multiple HD video streams between McGill and UBC demonstrated.
   Complete. See explanation of stability problems in Appendix 1.

3. Report on network performance during multiple HD video streams transmission.
   Complete. See explanation of hardware problems in Appendix 2.

4. Report on latency of final system.
   Complete. See Appendix 3.

5. Progress report on software development for multicast transmission.
   Complete. It will be tested on the 1 Gbps copper network.

6. Progress report on possible development of immersive 3D audio projection for use in music.
   Complete. Development will not be possible during this project. This work requires a facility equipped with loudspeaker arrays and processors. Such a facility is under construction at McGill, but completion has been delayed due to funding problems.

Updated Project Plan

The updated Project Plan for Milestone 4 appears below.

Milestone 4 – December 31, 2006.

1. Multicast transmission demonstrated.
2. Report on use for meetings and small group teaching sessions as well as “drop-in” common room use.
3. Report on deployment in a concert hall or sports stadium.
4. Report on formative evaluation of teaching and coaching sessions.
5. Executives invited to try using the technology
6. Cultural industry reps invited to observe performances.

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Technological Progress

It was discovered that adding a second video stream in the opposite direction to the load on each server caused instability in the image. This is a major problem that is explained further in Appendix 1. The departure of the Research Associate in charge of programming toward the end of the reporting period delayed work on solving the problem. Multicast software was developed and will be tested in the next reporting period. Problems with the 4-port module on both of Canarie's Foundry switches at McGill and UBC further delayed use of the system during much of the reporting period. The problem is explained further in Appendix 2. Latency measurements are given in Appendix 3 although it is hoped that latency can be further reduced.

Appendix 1: Report on transmission of multiple HD video streams between McGill and UBC
Appendix 2: Report on network performance during multiple HD video streams transmission
Appendix 3: Report on latency of final system

Communications

There were no communications during the reporting period.

Web Site Information

http://www.canarie.mcgill.ca