Network-Enabled Platforms (NEP-2) Program
Semi-Annual Progress Report

Project Information

Lead Contractor:	McGill University		
Project Name:	Open Orchestra	Project #:	NEP-54
Date:	January 30, 2012.		
Claim Period:	September 1, 2011	To:	December 31, 2011.

PROGRESS REPORT CHECKLIST – Please ensure the following sections are completed:

Project Progress	Completed
1. Technological Progress	Yes
2. Project Development & Activities	Yes
3. Project Plan	Yes
4. Updated Claim Forecast	Yes
5. Intellectual Property	Yes
6. Communications	Yes
7. Web Site Information	Yes

CLAIM CHECKLIST - Please ensure the following sections are completed and attached to this document:

	Completed and Attached
8. Financial Claim Schedule	Yes
9. Invoices for Eligible Costs over $1000 incurred and paid	Yes
10. Employee Timesheets (signed by employees and supervisor)	Yes

APPENDIX CHECKLIST – Please include any relevant materials:

	Attached
11. Communication Materials	Yes

1. Technological Progress

1. Long Distance Bandwidth Problems

The Claim 4 Progress Report at the August 31 milestone described a network problem that had a severe negative impact on high bandwidth video playback and stated, "A Nortel switch at UBC has been identified as the possible cause of the problem and arrangements are being made to replace it with a Cisco switch." This was done and it solved the bandwidth problem.

2. Adobe Flash Video Player Problems

Once there was full bandwidth available between McGill and UBC, there continued to be noticeable problems playing back high bandwidth video although they were less severe. The necessary TCP tuning described in previous reports ensured that the full data rate was delivered reliably, but the client nevertheless displayed glitches in the video that did not appear when playing from a local file. Changing from the RTMP implementation (using TCP) to a RTMFP implementation (using UDP) did not solve the problem.

Discussion of our findings with the development team at Adobe identified a bug in their RTMFP implementation that will be corrected in their next release. In the meantime, they will try to provide a custom version of Flash Media Server for us that increases RTMFP SendFlow buffer size from 128KB to 512KB which should solve the problem. They were unable to give a satisfactory explanation for the problem with their RTMP implementation using TCP.

3. Improved Home Version

Although the simplified home version was intended as a "play along" activity only, work is underway on adding a simple recording capability that would greatly enhance its effectiveness and appeal.

2. Project Development & Activities

1. Video and audio tracks converted for simplified mode
Complete

2. Evaluation documents complete for expert "visualization" system, comments and workspaces
Evaluation delayed due to Adobe Flash video player problems

3. Simplified mode player complete
Complete

4. Final system complete
Complete except for integration of the visualization system

5. System documentation and user instructions complete
Complete

6. Evaluation documents complete for simplified mode and final system
Evaluation delayed due to Adobe Flash video player problems

7. Final system demonstrated for CANARIE staff, Press, RISQ and international and/or other appropriate conferences
Complete with another conference substituted for RISQ and with the press demo postponed until video playback is improved

New Deliverables Added:

8. Although the simplified home version was intended as a "play along" activity only, work is underway on adding a simple recording capability that would greatly enhance its effectiveness and appeal.

9. The original deliverable was to have only one set of classical or jazz recordings with the possibility of adding a set of voice recordings. It was subsequently decided to have all three sets of recordings. The final set of classical recordings was completed during the period.

3. Project Plan

The project has followed the plan outlined in the SOW and the last progress report with the following exceptions:

1. **Long Distance Bandwidth and Adobe Flash Video Player Problems**

    These problems described above, which negatively impacted high bandwidth video playback, delayed testing at the partner institutions and consumed a great deal of development time.

2. **Staff Availability Problem**

    One of our programmers relocated from Montreal to San Francisco during the period and although he is now back working on the project, this delayed integration of the expert or "visualization" system, demonstrated at the last milestone, with the main user interface.

4. Updated Claim Forecast

The actual cash flow summary, with actuals and a forecast for 2012, is attached as Appendix 5.

5. Intellectual Property

There was no Intellectual Property developed during the reporting period.

6. Communications

There were presentations by Jeremy Cooperstock at the International Symposium on Synchronous Distance Learning on October 5 – 6, 2011 (attached as Appendix 2) and by Nicolas Bouillot at the AES 44th International Conference in San Diego on November 18 – 20, 2011 (attached as Appendix 3).

There is also a journal article, "A High-Fidelity Orchestra Simulator for Individual Musicians' Practice," attached as Appendix 4, that is expected to be published in 2012 and is not for general release until that time.

7. Web Site Information

The project web site address where documentation is being maintained is:
http://canarie.mcgill.ca/project_nep2_index.html