EE/CpE 415-423 – 416/424
2002 Fall – Spring 2003
WEEKLY STATUS REPORT

Group No.: 3	Date: February 17, 2003		Report No:
Project Title:	Source Code Reuse Mechanism		
Group Leader:	Noel Villegas	Advisor:	Professor Kiss
Sponsor/Client:	BAE Systems		
Number of Hours Spent:	30		
Project on Schedule:	YES		

Weekly Status:
Last week, Aiyana, Sandra and Noel were unable to find a convenient meeting time for the second trig code review.

Noel began work on error analysis in the context of our libraries. It is standard to use structured exception handling techniques from standard C++ and inherit from standard exceptions such as std::exception and std::overflow to represent runtime errors. Also, the library programmer should use std::logic_error to represent errors in pre conditions. The use of metaprogramming can determine better when template types do not fit conditions imposed on types required in the library. For numerical errors, it had been suggested previously to compute order of magnitude errors based on algorithmic complexity. We would supplement this idea with order of magnitude error estimates based on machine epsilon. It is not determined whether this would be a forward or backward error analysis, but an idea would be to have a debug runtime where we could compute condition number for example for matrices in the Kalman Filter loop.

Aiyana expanded the debugging and benchmark section put out by Noel in the interim revision 0.2n. All the algorithms are instantiated and tested for errors and speed. Aiyana began coding the LUT algorithm for the trig library. She was unable to get it to compile, however it appears as if her error was a minor C++ error of a lacking static pointer initialization, not an error in LUT understanding. She also wrote section 6.4.2 on Policy Classes for the SCCD. She is currently working on finishing the LUT and section 6.4.4 for the SCCD.

Greg issued SCCD version 1.2 He had formatted the report using LaTex tools. Using text from the previous deliverables, and writing in sections on his own, he finished all of section 1, 3.1, much of section 6. Together with Professor Kiss, the sections still requiring work have been identified and opened to the group for completion. The low completion sections of the SCCD have placeholders in the document for us to insert new text.