The effects of commutative transactions on distributed database performance was analyzed. The benefits were found to be insignificant unless the number of transactions was large. Two distributed algorithms for adaptive replication of data were developed, one which optimizes the communication cost objective function and a second which optimizes communication time. A dynamic replication control algorithm was studied and showed improved performance over dynamic offsetting schemes. Concepts for using replicated data in multilevel secure databases have shown the ability to guarantee one-copy serializability using a small amount of trusted code. There were 14 articles published under this grant.
This constitutes the final report of the three year award AFOSR grant # 90-135. The following is a list of publications that contain results of our research. All acknowledge support from AFOSR.


