The information and software engineering laboratory (ISE) at BRC is involved with research related to information technologies, software engineering, and security. Current research foci of the laboratory are as follows:

- **Reusable Component Framework**
  Reuse must be elevated to an equal partner in the design and development process, with an emphasis on trying to achieve domain-and-organization-specific reuse for those products the company is likely to build in the future. We are exploring both class-based and component-based reusability, by providing an object-oriented design approach, methodology, and tool that promotes reuse for initial and all stages of design and development. This work is conducted jointly with USNA (D. Needham), and is funded by the Electric Boat Corporation.

- **Security Solutions for Distributed and Agent Computing**
  Security issues for object-oriented languages and applications, realized in a distributed setting, with the potential for autonomous agents, are an important concern in today's security conscious enterprise and distributed computing environments. Our focus is on formal security models, authorization and enforcement mechanisms, and authentication for distributed and agent environments. This work is funded in part by AFOSR, and has been supported previously by the Mitre Corporation.

- **Optimal Deployment of Distributed Objects**
  Whether deploying new distributed software, redeploying existing distributed application components or distributing a standalone legacy application, a key decision that needs to be made is the location of each software component in the target distributed environment. To assist in the process of deploying distributed software, we have defined an abstract language of distributed applications and we have developed a binary integer programming model for optimizing deployment based on message traffic. This work is funded in part by AFOSR, and has been supported previously by the Mitre Corporation.

- **Large-Scale Software Development**
  The State of Connecticut Insurance Department is in a multi-year project to design and develop the next generation of distributed computing application in support of their day-to-day operations. As part of this project, funded by the State of CT Insurance Department (since 1999), faculty and graduate students have been participating in technology assessment, UML, object-oriented, and software architectural analysis, and proof-of-concept prototyping for a client/server multi-tier architectures.