Research Schedule

Gong Su

1. Summer 2000

I will design and implement, with the help of 1-2 project students, most of the low level core infrastructure mechanisms for VAN. My plan is to carry out research and coding at the same time (throughout the rest of my program). The goal of the design and implementation of the core mechanisms is that the functionality of the infrastructure can be incrementally extended when more research issues are being addressed later. Also, the design and implementation will strive to leverage as much as possible existing technologies to avoid unnecessary re-engineering. These core mechanisms (mostly belonging to VAN Local Manager) include,

- Create/delete Virtual Nodes, Virtual Ports, and Virtual Links
- Monitor VN, VP, and VL status
- Redirect traffic in and out of VAN
- Maintain local resource usage and availability information

2. Fall 2000

I will be focusing on researching, designing, and implementing some of the important functions of the VAN Domain Server. These functions, extending VAN’s functionality to the inter-domain scale, will include,

- Obtain inter-domain network topology and resource information
- Abstractions for specifying VANs and heuristics for mapping the specifications to physical network
- Intra- and inter-domain resource acquisition protocols and deadlock resolution mechanisms

3. Spring 2001

This semester will be spent mainly on the failure recovery mechanisms of the VAN infrastructure. I’ll be studying and researching recovery mechanisms based on local and global information. I’m particularly interested in tying this part of the research with current emerging technologies such as MPLS. Also in this semester, I’ll be trying to develop some interesting applications of VAN, such as web caching, active firewall, etc.
4. Summer 2001

By the end of Spring 2001, hopefully a more or less complete implementation of the VAN infrastructure is in place. I’ll be doing performance evaluation and improvements on the system. Also, I expect to start writing the thesis.

5. Fall 2001

If more time is needed for finishing writing the thesis.