The long time promised marriage between computing and networking is moving very fast towards consummation and will fundamentally change the way we think about and use computing. During this process it is difficult even to keep pace with the new related terms coined day by day. For example Web computing, cluster computing, commodity distributed computing, metacomputer, computational grid, Web + Object integration, etc.

It is very hard to summarize the main issues, trends and facts of this development very briefly. But let’s have a try! A list of the most important ones is to follow:

- Internet2 project which helps realize a new cycle of innovation in networking
- QoS (Quality of Services) efforts to provide end-to-end network parameters as bandwidth delay maximum packet loss rate and delay jitter, etc.
- Application of new protocols and standards as ATM (Asynchronous Transfer Mode)
- Acceptance and application of the Java language and Java/JVM (Java Virtual Machine) - based solutions as applet, servlet, Jini, etc.
- Paradigms and architectures as CORBA (Common Request Broker Architecture), DCOM (Distributed Common Object Model), etc.
- New trends in distributed enterprise architectures supported by all large computer companies such as IBM, Open Blueprint and San Francisco, HP Enterprise Solution Framework, etc.
- Big projects of different consortia to develop the infrastructure, technology and tools for geographically distributed computational grids as Globus, Legion, SuperWeb, etc.
- New application areas and classes based on the coordinated use of geographically distributed resources as
  - Distributed collaboration
  - Teleimmersion
  - Data intensive computing
  - Virtual laboratories
  - Electronic commerce

Naturally our current Special Sessions on Network Computing which are the continuation of last year’s Network Computing Workshop at the annual Euromicro Conference provide only a modest contribution to the main trends.

The first paper of Session I, titled Parallel Computing Using Java Mobile Agent by P. Christoforos et al. deals with a very promising trend of using AI technology based on aglets developed by IBM Tokyo.
The paper of M. Giordano et al. presents experimental results using PVM communication on a Network of Workstations over an ATM networks. They use parameter tuning of both application program interface and PVM implementation level to improve the features of communication.

The paper of S. Koranne deals with an important problem of large-scale scientific computation i.e. graphs partitioning. A novel graph partitioning method is described and implemented on a Network of Workstations (using PVM).

In the first paper of Session II M. O’Connel and P. Nixon describe a distributed file system for network computers. They propose JFS (Java File System) which provides strong and efficient security solutions for distributed files.

The paper of R. Corchuelo et al. Deals with the problem of distributed multiparty interactions. The features the implemented system are demonstrated by experimental results.

M. May has faced a difficult problem of demonstrating the (in) security of different cryptographic algorithms. During this project he considered to use idle CPU resources or idle time on the Internet. The paper summarizes the results of the first task and gives an interesting view on the hard problems of computer time brokerage.

We hope that there will be a lot of stimulating discussions among participants of the sessions and believe we are going to have fruitful and useful sessions.